6 Ashley Dr., 1st Floor
Scarborough, ME 04074

T 207.879.1930
TRCcompanies.com

May 30, 2019

Preston F. Crow, Chairman
Ashland Planning Board
101 Main Street
Ashland, MA 01721

Subject: Eversource Energy - Hopkinton to Ashland Transfer Line Replacement Project Scenic Roads Permit Application

Dear Mr. Crow:

TRC has prepared the enclosed Scenic Roads Permit Application on behalf of NSTAR Gas d/b/a Eversource Energy (Eversource) for the Hopkinton to Ashland Transfer Line Replacement Project (the "Project"). The Project will replace approximately 3.71 miles of existing 6-inch-diameter steel natural gas pipe with 12-inch-diameter steel natural gas pipe in the Towns of Hopkinton and Ashland. Approximately 2.6 miles of the Project is located in the Town of Ashland. The replacement pipeline will cross beneath two scenic roads, Chestnut Street and Cedar Street, within Eversource's existing pipeline easement. The Project will temporarily disturb existing stone walls along Chestnut Street and Cedar Street within the existing easement during the installation of the replacement pipeline . Eversource is seeking approval for these two pipeline crossings in accordance with the Town of Ashland Scenic Roads Bylaw (§249 Article III).

Eversource is committed to providing safe and reliable natural gas service with competitive rates to its customers. The primary driver of the Project is to make the Transfer Line more reliable by creating a second independent gas feed to supply the Pond Street Take Station, which services the Towns of Framingham and Ashland. This will be accomplished by improving the utilization of natural gas from the Hopkinton LNG facility under high demand periods, as well as provide additional Transmission sources to Framingham and Ashland.

The existing 6-inch diameter portion of the Transfer Line is undersized thus creating a large pressure drop that limits the supply of gas to Framingham and Ashland. Under existing high demand conditions, the Transfer Line cannot adequately maintain the required pressure and flow rate at the Pond Street Take Station in Ashland and requires a constant supply of natural gas from additional transmission sources. In the event of an interruption of service to one of the supplies, having two independent supplies will provide operational reliability for Eversource's approximately 20,000 customers in Framingham and Ashland.

The enclosed application includes the following information:

- Application Permit Form;
- Application Narrative;
- Three (3) copies of the Project Construction Permit Drawings; and
- One (1) electronic copy of the submitted materials on a CD.

A fee sufficient for the cost of advertising and notification will be provided once the Planning Board confirms the total fee amount. If you have any questions regarding this submission, please do not hesitate to contact me at 207-274-2604 or at rpaquette@trcsolutions.com.

Best Regards,
TRC Environmental

Richard C. Paquette, Jr.
Senior Project Manager

Enclosures
cc: Matthew Waldrip, Eversource
Sean Berthiaume, Eversource

Town of Ashland
Planning Department
101 Main St.
Ashland, MA 01721
508.881.0101
Ashlandmass.com/193/Planning

Application for Planning Board Approval/Permit

Note: Application must be complete, with a certified plot plan and all application fees to be accepted.

Property Information:

Street Address: Eversource's existing Transfer Line easement, Chestnut Street and Cedar Street

Zoning District: N/A - Chestnut Street and Cedar Street Overlay District: N/A - Chestnut Street and Cedar Street

Assessor's Map: N/A Lot: N/A Deed Book: N/A Page: N/A

Current Property Owner: N/A

Permit/Approval Sought:

____Special Permit (§9.3) ____Special Permit Amendment/Modification ____Design Plan Review (§9.6)

____Site Plan Review (§9.4) ____Site Plan Modification _X_Scenic Road Permit (Ch. 249 §20)

____Earth Removal Permit (Ch. 242 §3) ____Site Alteration Special Permit (§5.8)

____Subdivision (Include Subdivision Application Form) ____Wireless Communication Facilities (§6.4)

Use Type: Residential:____ Commercial:____ Industrial:____ Mixed Use:____

Applicant Information:

Owner:____ Tenant:____ Prospective Purchaser/Tenant:____

Name: Matthew Waldrip

Address: 247 Station Drive, SE 2122, Westwood MA 02090

Phone: 781-441-8247 Email: matthew.waldrip@eversource.com

Agent's Name: Richard Paquette

Agent's Address: 6 Ashley Drive, Scarborough ME 04074

Agent's Phone: 207-274-2604 Agent's Email: rpaquette@trccompanies.com

Additional Information:

Are all real estate taxes and other assessments to the Town current?: Yes

Is the parcel on a scenic road?: Yes Is the parcel in a flood plain?: No

Is the parcel within 100 feet of a wetland or 200 feet of a river: No

Is this an amendment to a previously issued Special Permit? (attach approved permit): No

Date structure(s) built?: N/A

Description of the Relief Sought: (attach additional pages if needed)

TRC Environmental Corporation has prepared this Scenic Roads Application for the Ashland Planning Board on behalf of NSTAR Gas d/b/a Eversource Energy, for the Hopkinton to Ashland Transfer Line Replacement Project ("Project"). The Project involves replacing approximately 3.71 miles of buried 6-inch-diameter steel natural gas pipe with 12-inch-diameter steel natural gas pipe in the Towns of Hopkinton and Ashland (the "Project"). Approximately 2.6 miles of the replacement pipeline is located in the Town of Ashland. The Project will cross two designated Scenic Roads in the Town of Ashland, Chestnut Street and Cedar Street. During construction the Company will temporary disturb existing stone walls along the two roads as the replacement pipeline is installed within the easement. The enclosed application for consent has been prepared and filed with the Ashland Planning Board in accordance with the Town of Ashland Scenic Roads Bylaw (§249 Article III).

What specific zoning bylaws and/or Special Permit types are relevant to this application?:

Scenic Road Permit

Benefits of Project:

The Project will eliminate an existing pressure drop along the Company's Hopkinton-Ashland Transfer Line. Due to the infrastructure restrictions associated with the existing Transfer Line, the Company is limited in its ability to transport liquefied natural gas and natural gas supply from transmission providers along the Transfer Line during periods of high demand. This physical limitation could have a negative effect on the supply to customers during periods of high demand. Therefore, the Project improves the performance and reliability of the natural gas distribution system in the greater Framingham area of the Company's service territory, by providing the Company with alternative means to transport and supply gas to this area of its system.

Existing use and condition of the property and surrounding neighborhood: (Please list all non-conformities.)

Chestnut Street and Cedar Street; surrounded by a mixture of forested, industrial and residential areas.

Attach Building Permit Denial letter if applicable.

By signing below you assert this application is complete and accurate to the best of your knowledge:

Signatures:

Applicant/Agent: _____ Applicant's Name: Matthew Waldrip

Agent's Relationship to Applicant: Consultant Firm: TRC Companies

Owner: N/A Owner's Name: N/A

Note: If the applicant is not the owner, please have the owner sign above or submit a letter of permission with the application.

Application Requirements

All applications:

All applications must include a fully completed application form and two checks for the full amount of the application fee and the peer review deposit the made to the Town of Ashland.

All applications must include a copy of the Assessor's Card for the property or properties in question.

Attach Building Permit Denial letter if applicable.

All other applicable taxes and fees on the property must be paid before any permits can be issued. It is strongly advised to check with the Treasurer's Office before the application process is begun.

Applications for Special Permits must include the type of permit applied for: use, Flood Plain Overlay District, environmental standards, parking, landscaping, loading requirements, adult entertainment, or any other Special Permit type.

Special Permit, Site Plan Review and Subdivision Approval Applications:

All site plan review and subdivision approval applications must include ten (10) copies of the Site Plan and/or Design Plan, two (2) 24x36", and eight (8) 11x17" sizes. Please discuss with the Planning Department plans or information that may be required specific to your project. In addition, a .pdf version of the submitted plans must be either handed to the Planning Department or sent be email to planning@ashlandmass.com. A georeferenced CAD file (NAD83) of the as-built plans are required before occupancy permits are issued.

Special Permit applicants must submit a certified abutter's list of abutters within 300' of the subject property . Abutters lists are requested from the Assessor's Office at least 10 days before the application deadline .

Please note that Definitive Subdivision Applications must include all items as required in Chapter 344 Section 8 of the town bylaws unless specifically waived by the Planning Board.

All peer review deposits must include a W-9 form if the town does not already have this on file. This is to allow us to return any remaining funds at the end of the process. Applicants may request a balance of the funds at any time.

Scenic Road Special Permit:

All scenic road special permits must include three (3) copies of the plans along with an electronic copy of submitted materials.

Earth Removal Special Permit:

All earth removal permits must include three (3) copies of the contour plan showing original grades and drainage, along with three (3) copies of the same at completion. The application must also include a detail of the amount and type of material to be removed, and the proposed truck route including truck size.

Site Alteration Special Permit:

Site Alteration Permits must include photographs of the site, location of trees and vegetation, amount of landscaping materials, a certified plot plan, a timetable and a written narrative of the reasons for the project and how erosion will be controlled. See Chapter 282 Section 5.8 for exact requirements.

Ashland Planning Department Fees

Site Plan Review:

Industrial/Commercial:	
0-2,000 ft^2:	$750
2,001-5,000 ft^2:	$1000
	+ peer review deposit of $2,000
5,001-10,000 ft^2:	$2000
	+ peer review deposit of $3,500
Greater than 10,000 ft^2:	$2000 + $0.15 per ft^2 of Gross Floor Area
	+ peer review deposit of $6,000
Residential:	$250 per residential unit
	+ peer review deposit of $2,500
Special Permit Application:	$300*
Subdivision Application:	
Approval Not Required:	$250 + $150 per additional lot created
Preliminary Plan Approval:	$1,500 + $150 per lot
	+ peer review deposit of $2,500
Definitive Plan Approval:	$2,000* + $500 per lot
	+ peer review deposit of $5,000
Modification of Prelim Plan:	$1,500
	+ peer review deposit of $1,500
Mod. of Definitive Plan:	$1,500 + $100 per lot
	+ peer review deposit of $2,500
Other Costs:	
Lot Release:	$150 per lot
Lot Re-release:	$50 per lot
CoUrbanize Fee:	varies (see CoUrbanize Fee Schedule)

*: Special Permits and Definitive Subdivision Plan Approval require public hearings. There are additional fees for the following:

Legal Advertisement:	Cost (usually around $60-80)
Abutter list:	$2 per abutter, $50 max (Obtained at Assessors Department)
Abutter notification:	$2 per abutter, $50 max (Planning Department will mail notifications)

CoUrbanize Fee Schedule

Application Type	CoUrbanize Requirement
Site Plan Review	CoUrbanize Required
Site Plan Review (Pertaining to Uses Proposed for ADD A, B, & C)	Town planner or Planning Board determines whether CoUrbanize is required
Special Permit	Town planner or Applicable Regulatory Board (PB/ZBA) determines whether CoUrbanize is required
Subdivision Permit (Cluster Included)	CoUrbanize Required
Comprehensive Permit (40B)	CoUrbanize Required
Additional Customization	Applicable Regulatory Board determines whether CoUrbanize is required

The requirement to engage the services of CoUrbanize, as listed above, only pertains to the basic CoUrbanize package, not additional customization services*. The Town Planner and/or Planning Board will determine whether and to what extent additional customization services are required (see second chart below). Any applicant can be granted a waiver from engaging the services of CoUrbanize at the discretion of the Planning Board.

Project Type	Building Size (square feet)	Total Fee Charged By The Planning Department
Small	0 – 24,999	$600.00
Medium	25,000 – 74,999	$1,100.00
Large	75,000 – 149,999	$2,500.00
Very Large	150,000 and Greater	$3,950.00

Additional Customization*	
Traffic	$1,500.00
Shadow	$1,750.00
Parking	$500.00
Other Impact Study	$1,500.00

Scenic Roads Application

Filing Under the Town of Ashland Scenic Roads Bylaw

Hopkinton to Ashland Transfer Line Replacement Project

Ashland, Massachusetts

Submitted to:
Ashland Planning Board
101 Main Street,
Ashland, MA 01721

Prepared for:
Eversource Energy
247 Station Drive
Westwood, MA 02090

Prepared by:
TRC Environmental Corporation
6 Ashley Drive
Scarborough, ME 04074

May 2019

TABLE OF CONTENTS

1.0 Introduction

TRC Environmental Corporation ("TRC") has prepared this Scenic Roads Application for the Ashland Planning Board on behalf of NSTAR Gas d/b/a Eversource Energy ("Eversource"), for the Hopkinton to Ashland Transfer Line Replacement Project ("Project"). The Project involves replacing approximately 3.71 miles of buried 6-inch-diameter steel natural gas pipe with 12-inch-diameter steel natural gas pipe in the Towns of Hopkinton and Ashland (the "Project"). Approximately 2.6 miles of the replacement pipeline is located in the Town of Ashland.

The Project will eliminate an existing pressure drop along the Company's Hopkinton-Ashland Transfer Line ("Transfer Line"). The Transfer Line is an existing, high-pressure distribution pipeline that runs from Eversource's Wilson Street Gate Station in Hopkinton to the Pond Street Gate Station in Ashland within an existing 20 – 30-foot-wide permanent easement. This approximately 25,000-foot-long pipeline includes approximately 2,200 feet of 12-inch diameter pipe on the Hopkinton end (west), approximately 3,100 feet of 12-inch diameter pipe on the Ashland end (east) and approximately 19,600 feet of 6-inch diameter between the two 12-inch sections. The 6-inch diameter section of pipeline is the subject of this replacement project.

Due to the infrastructure restrictions associated with the existing Transfer Line, the Company is limited in its ability to transport liquefied natural gas ("LNG") and natural gas supply from transmission providers along the Transfer Line during periods of high demand. This physical limitation could have a negative effect on the supply to customers during periods of high demand. Therefore, the Project improves the performance and reliability of the natural gas distribution system in the greater Framingham area of the Company's service territory, by providing the Company with alternative means to transport and supply gas to this area of its system.

The Project will cross two designated Scenic Roads in the Town of Ashland, Chestnut Street and Cedar Street. During construction the Company will temporary disturb existing stone walls along the two roads as the replacement pipeline is installed within the easement. The enclosed application for consent has been prepared and filed with the Ashland Planning Board in accordance with the Town of Ashland Scenic Roads Bylaw (§249 Article III).

	View of Chestnut Street from the existing Transfer Line easement facing east.

	View of Cedar Street from the existing Transfer Line easement facing east.
	View of the existing Transfer Line easement through residential property west Cedar Street.

2.0 Existing Site Conditions

The existing Transfer Line enters the Town of Ashland just to the southwest of Hardwick Road in Ashland within a 20-foot wide easement. The existing easement and pipeline cross residential parcels along Hardwick Road, Pennock Road, Winesap Way and Indian Spring Road before reaching West Union Street (State Route 135). The easement continues to the east across additional residential parcels before entering Ashland State Park. The easement crosses approximately 1,450 feet of the northern tier of the park before leaving park property and crossing residential parcels with frontage on Metropolitan Way. The easement re-enters the Ashland State Park property to the east of Metropolitan Way and crosses Cold Spring Brook north of the Ashland Reservoir dam and spillway before reaching Chestnut Street.

East of Chestnut Street, the easement and pipeline continue across a residential property with frontage on Chestnut Street before crossing a large parking lot associated with the Chestnut Place Apartment Homes complex on Joanne Drive.

East of Joanne Drive, the existing pipeline easement passes through residential parcels with frontage on Prospect Street, Stage Coach Drive, Wayside Lane, Brimstone Way, and Carriage House Path. The easement also crosses a property subject to a conservation restriction and managed by the Great Bend Farm Trust. The proposed replacement Project terminates at Cedar Street where the existing 6-inch diameter pipe ends, and the 12-inch diameter pipe begins.

Eversource has provided a set of construction permit drawings that display detailed information on existing site conditions. As indicated in §249-15 and detailed in the permit drawings (see Attachment A), the two scenic roads crossed by the Project are Chestnut Street and Cedar Street.

3.0 In-Street Construction at Scenic Roads

The Project route crosses designated Scenic Roads Chestnut Street and Cedar Street, which both have two travel lanes with varying shoulder widths. Eversource proposes to cross both Scenic Roads roads using the open trench construction method. The Project route crosses the roads at a relatively perpendicular angle.

Construction within and across the Scenic Roads using the conventional open cut method will be based on site conditions and applicable road opening permit requirements. Roadway opening permits will be sought from the Town of Ashland. Permit conditions will determine the day-to-day construction activities at road crossings.

Prior to construction, the "Dig Safe" system, or state or local utility operators, will be contacted so they can mark their facilities that may intersect, or are in proximity to, the proposed pipeline. The contractor may elect to expose the utilities prior to construction to confirm their exact location.

Construction will be scheduled for work within roadways and specific crossings to minimize impacts to commuter traffic. Appropriate traffic management signage and necessary safety measures will be implemented in compliance with applicable permits for work in the public roadway. Arrangements will be made with local officials to have traffic safety personnel; police details or qualified and trained flaggers available during periods of construction. Detours will be implemented where necessary to maintain sufficient traffic flow.

Following the installation of traffic control devices, traffic will be detoured around the open trench during the installation process. The pipeline crossing is installed one lane at a time. As the pipe is installed, successive lanes are alternately taken out of service for pipe installation until the crossing is completed. Another option is to detour traffic around the work area entirely to nearby roadways if required by local permits.

Pavement over the proposed trench will be cut, removed, and disposed of properly. The trench is excavated using a combination of a backhoe and hand shoveling around existing utilities once the ditch is completed and the pipe is installed (welded, inspected, and coating applied to weld joints). If required, a vacuum truck will be used, but only if excavation is not feasible with the use of a machine or shovel. Existing utilities exposed during excavation will be supported as

necessary at their existing elevation to avoid damage. Utility supports will be maintained until backfill and compaction of the pipeline ditch and the exposed utility are completed. The trench is then backfilled according to permit specifications. If the roadway surface was paved, the paving will be restored in accordance with the permit requirements. Since the roads will be repaired following the completion of construction, there will be no effect on the scenic or aesthetic value of Chestnut Street or Cedar Street as a result of the Project.

4.0 Temporary Tearing Down or Destruction of Stone Walls at Scenic Roads

As detailed on the permit drawings (see Attachment A), within the existing easement, there is an existing stone wall located approximately 10-feet west of the shoulder of Chestnut Street. The stone wall is overgrown with vegetation. The stone wall enters the existing easement from the north and continues approximately 12-feet into the existing easement, crossing over the proposed centerline of the Project.

There is an existing stone wall located approximately 20-feet west of the shoulder of Cedar Street. The stone wall is well maintained and appears to be part of the landscaping for the landowner of this property. Within the existing easement, the stone wall abuts the proposed centerline of the Project and extends approximately 7-feet to the north. The stone wall breaks for the landowners driveway, then resumes north of the driveway and outside the Project area.

Both stone walls at the Scenic Roads will be temporarily disturbed within the existing easement as a result of the Project. Since the stones will be removed from their current location within the existing easement, set aside during construction, then the stone walls will be reassembled in the same location with the same materials following the completion of construction surrounding Chestnut Street and Cedar Street, the Project will have no effect on the scenic or aesthetic value of the Scenic Roads.

The Bylaw defines the tearing down or destruction of stone walls as the destruction of more than ten linear feet of stone wall involving more than one cubic foot of wall material per linear foot above existing grade. Temporary removal and replacement at the same location with the same materials is permitted without Planning Board approval if the Department of Public Works is notified before the work begins so that it confirms that the wall is properly replaced. The Project involves the temporary removal and replacement of the walls at the same location.

5.0 Cutting or Removal of Trees at Scenic Roads

The Project is located within the existing 20-foot wide Transfer Line easement at the two scenic road crossings. Trees are defined by the Bylaw as a tree whose trunk has a diameter of eight inches or more as measured four feet above ground. Based on this, no tree removal is anticipated at the Chestnut Street or Cedar Street crossings (see §249-17 Definition of Cutting or Removal of Trees).

6.0 Natural, Environmental, Aesthetic and Historical Values

There are no wetlands or waterbodies adjacent to either Chestnut Street or Cedar Street within the Project area and no tree clearing is anticipated at the two road crossings. The stone walls at

the two road crossings within the existing easement will be temporarily removed and replaced following the completion of pipeline installation. No historic resources will be impacted by construction within the easement at the two road crossings.

7.0 Legal Notice

In accordance with the provisions of the Ashland Scenic Roads Bylaw, the Ashland Planning Board will hold a public hearing on Thursday June 27, 2019 at 7:15 PM, in the Ashland Town Hall, 101 Main Street, Ashland MA on the petition of Eversource Energy for approval of a Scenic Roads Application for the Eversource Energy Hopkinton to Ashland Transfer Line Project. This Project consists of temporary disturbances within the existing pipeline easement at two designated Scenic Roads, Chestnut Street and Cedar Street, consisting of in-street construction and temporary removal and reassembly of existing stone walls, but no disturbance to nearby trees along the Scenic Roads.

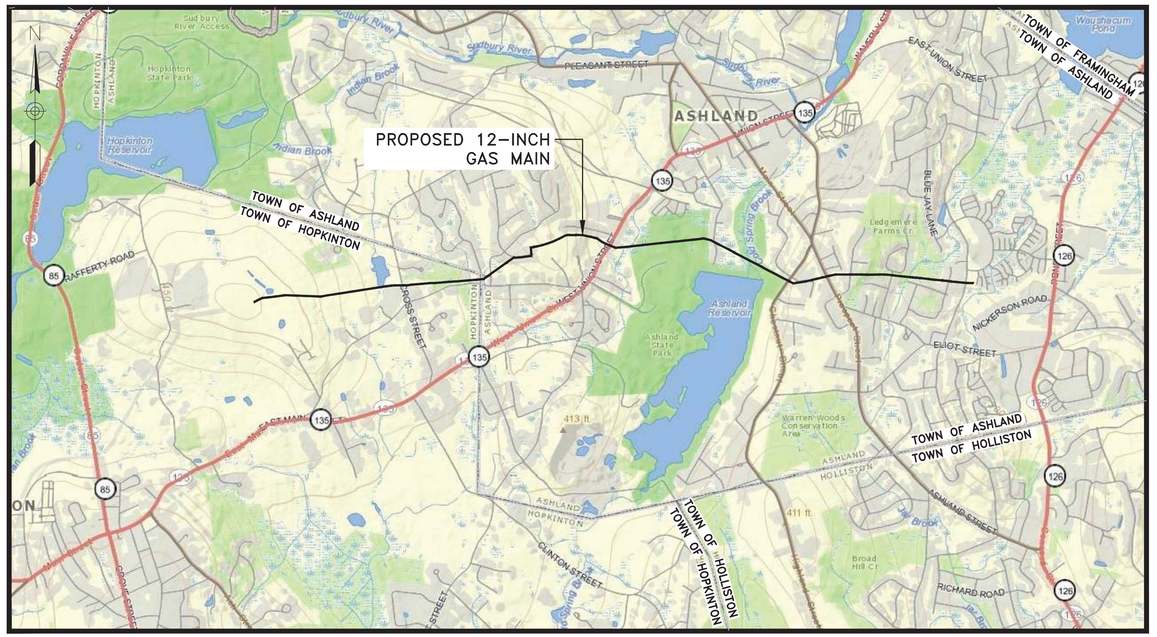
ATTACHMENT A

PROJECT PERMIT DRAWINGS

EVERSOURCE ENERGY
HOPKINTON–ASHLAND TRANSFER LINE REPLACEMENT PROJECT
TOWNS OF HOPKINTON & ASHLAND
MIDDLESEX COUNTY, MASSACHUSETTS

PREPARED BY

TRI–MONT ENGINEERING COMPANY
38 RESNIK ROAD, SUITE 102
PLYMOUTH, MA 02360



LOCUS PLAN
NOT TO SCALE

ISSUED FOR PERMIT

TRI–MONT DRAWING NO.	REVISION	TITLE
D–190–36–T01	A	TITLE SHEET
D–190–36–G01	A	GENERAL OVERVIEW
D–190–36–C01	A	GAS PIPELINE ALIGNMENT SHEET 1
D–190–36–C02	A	GAS PIPELINE ALIGNMENT SHEET 2
D–190–36–C03	A	GAS PIPELINE ALIGNMENT SHEET 3
D–190–36–C04	A	GAS PIPELINE ALIGNMENT SHEET 4
D–190–36–C05	A	GAS PIPELINE ALIGNMENT SHEET 5
D–190–36–C06	A	GAS PIPELINE ALIGNMENT SHEET 6
D–190–36–C07	A	GAS PIPELINE ALIGNMENT SHEET 7
D–190–36–C08	A	GAS PIPELINE ALIGNMENT SHEET 8
D–190–36–C09	A	GAS PIPELINE ALIGNMENT SHEET 9
D–190–36–C10	A	GAS PIPELINE ALIGNMENT SHEET 10
D–190–36–C11	A	GAS PIPELINE ALIGNMENT SHEET 11
D–190–36–C12	A	GAS PIPELINE ALIGNMENT SHEET 12
D–190–36–C13	A	GAS PIPELINE ALIGNMENT SHEET 13
D–190–36–C14	A	GAS PIPELINE ALIGNMENT SHEET 14
D–190–36–C15	A	GAS PIPELINE ALIGNMENT SHEET 15
D–190–36–C16	A	GAS PIPELINE ALIGNMENT SHEET 16
D–190–36–C17	A	GAS PIPELINE ALIGNMENT SHEET 17
D–190–36–C18	A	GAS PIPELINE ALIGNMENT SHEET 18
D–190–36–C19	A	GAS PIPELINE ALIGNMENT SHEET 19
D–190–36–C20	A	GAS PIPELINE ALIGNMENT SHEET 20
D–190–36–C21	A	GAS PIPELINE ALIGNMENT SHEET 21
D–190–36–C22	A	GAS PIPELINE ALIGNMENT SHEET 22
D–190–36–C23	A	GAS PIPELINE ALIGNMENT SHEET 23
D–190–36–C24	A	GAS PIPELINE ALIGNMENT SHEET 24
D–190–36–C25	A	GAS PIPELINE ALIGNMENT SHEET 25
D–190–36–C26	A	GAS PIPELINE ALIGNMENT SHEET 26
D–190–36–C27	A	GAS PIPELINE ALIGNMENT SHEET 27
D–190–36–C28	A	GAS PIPELINE ALIGNMENT SHEET 28
D–190–36–C29	A	GAS PIPELINE ALIGNMENT SHEET 29
D–190–36–C30	A	GAS PIPELINE ALIGNMENT SHEET 30
D–190–36–C31	A	GAS PIPELINE ALIGNMENT SHEET 31
D–190–36–C32	A	GAS PIPELINE ALIGNMENT SHEET 32
D–190–36–C33	A	GAS PIPELINE ALIGNMENT SHEET 33
D–190–36–C34	A	GAS PIPELINE ALIGNMENT SHEET 34
D–190–36–C35	A	GAS PIPELINE ALIGNMENT SHEET 35
D–190–36–C36	A	GAS PIPELINE ALIGNMENT SHEET 36
D–190–36–C37	A	GAS PIPELINE ALIGNMENT SHEET 37
D–190–36–C38	A	GAS PIPELINE ALIGNMENT SHEET 38
D–190–36–C39	A	GAS PIPELINE ALIGNMENT SHEET 39
D–190–36–C40	A	GAS PIPELINE ALIGNMENT SHEET 40
D–190–36–D01	A	TYPICAL DETAILS – PERIMETER & BUOYANCY CONTROLS
D–190–36–D02	A	TYPICAL DETAILS – OPEN CUT TRENCHING AND MANUAL VALVE
D–190–36–D03	A	TYPICAL DETAILS – ROAD AND UTILITY OFFSET CROSSINGS
D–190–36–D04	A	TYPICAL DETAILS – TYPICAL & WETLAND EXCAVATION CROSS–SECTION
D–190–36–D05	A	TYPICAL DETAILS – OPEN CUT WATER CROSSING
D–190–36–D06	A	TYPICAL DETAILS – MAINLINE CONSTRUCTION CONFIGURATIONS
D–190–36–D07	A	TYPICAL DETAILS – TIE–IN
D–190–36–D08	A	TYPICAL DETAILS – TIE–IN
D–190–36–D09	A	TYPICAL DETAILS – TEST STATIONS
D–190–36–D10	A	TYPICAL DETAILS – REGULATOR STATION INLET TIE–IN
D–190–36–D11	A	TYPICAL DETAILS – MISCELLANEOUS DETAILS

IFP PLAN SET
MARCH 18, 2019

No.	Description	By	Date	Appd
A	ISSUED FOR PERMIT	FAC	3/18/19	BCK
	REVISIONS			

BRENDAN C. KEARNS
COMMONWEALTH OF MASSACHUSETTS
CIVIL
NO. 53669
REGISTERED PROFESSIONAL ENGINEER

TRI–MONT Engineering Company
Plymouth, MA.

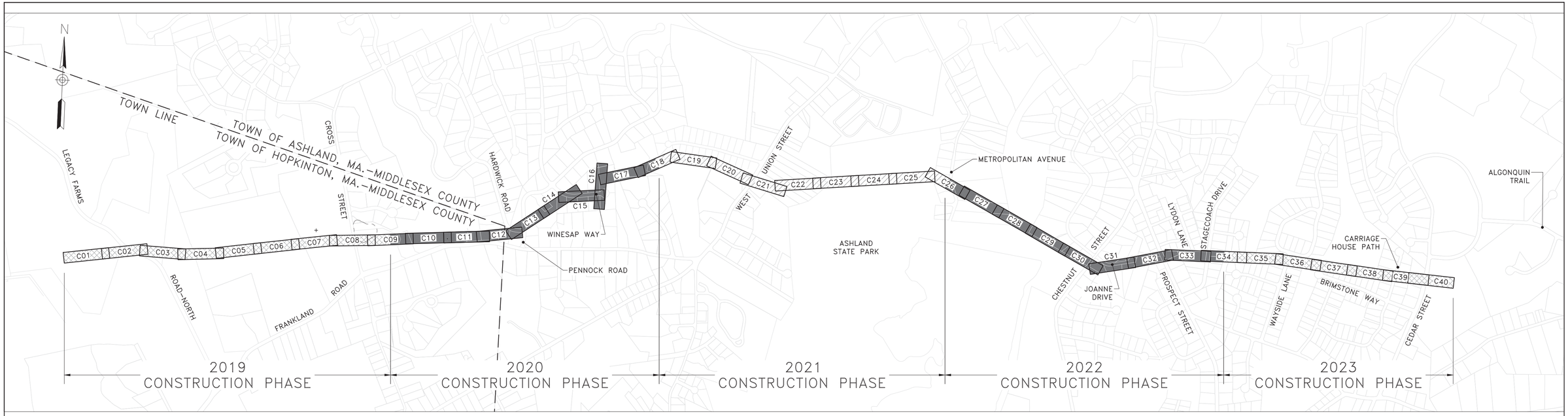
PROJECT: HOPKINTON–ASHLAND TRANSFER LINE REPLACEMENT PROJECT

CLIENT: EVERSOURCE ENERGY

TRI–MONT	By	Date	Client	By	Date
Drawn	FAC	08/08/18	Approved		
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale: N.T.S. | Job No. | Drawing No.: D–190–36–T01 | Rev. No.: A

Title: TITLE SHEET



GENERAL SITE PLAN
NOT TO SCALE

GENERAL NOTES

1. EXISTING CONDITIONS SHOWN HEREON ARE BASED ON A SURVEY PERFORMED BY BSC GROUP, INC. BETWEEN AUGUST AND NOVEMBER 2017.
2. CONTRACTOR IS REQUIRED TO PROTECT EXISTING UTILITIES, STRUCTURES, LANDSCAPE FEATURES, SIGNAGE, CURBS, ETC.; CARE SHALL BE TAKEN NOT TO DISTURB OR DAMAGE SUCH ITEMS AND THE CONTRACTOR WILL BE RESPONSIBLE TO REPAIR OR RESTORE ANY DAMAGE OR DISTURBANCE.
3. PROPOSED WORK SHALL BE PERFORMED AND COMPLETED IN COMPLIANCE WITH ALL PERMITS AND APPROVALS.
4. PROPOSED WORK SHALL BE PERFORMED AND COMPLETED IN COMPLIANCE WITH TOWN OF HOPKINTON AND TOWN OF ASHLAND SPECIFICATIONS AND STANDARDS WHERE APPLICABLE UNLESS OTHERWISE SPECIFIED ON THESE PLANS AND ACCOMPANYING PROJECT SPECIFICATIONS.
5. PROPOSED WORK SHALL BE PERFORMED AND COMPLETED IN ACCORDANCE WITH THE EVERSOURCE BMP MANUAL.
6. PROPOSED WORK SHALL BE PERFORMED AND COMPLETED IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
7. PROPERTY LINES, RIGHT-OF-WAY AND BUILDING LOCATION DATA SHOWN HEREON ARE PROVIDED BY BSC GROUP, INC.
8. THE SURVEY BAND SHOWN ON THESE PLANS IS INTENDED TO SHOW THE DIRECTIONAL ORIENTATION OF THE PROPOSED PIPE AS WELL AS THE PROPOSED LOCATION AND ANGLE OF PROPOSED BENDS.
9. NATURAL RESOURCE INFORMATION SHOWN HEREON IS BASED ON INFORMATION PROVIDED BY TRC SOLUTIONS.
10. METHODS OF EROSION CONTROL SHOWN HEREON IS BASED ON INFORMATION PROVIDED BY TRC SOLUTIONS.

CONSTRUCTION NOTES

1. THE PIPELINE WILL BE CONSTRUCTED IN ACCORDANCE WITH FEDERAL MINIMUM SAFETY REGULATIONS FR 49, PART 192, "TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE"; ASME B31.8, "GAS TRANSMISSION AND DISTRIBUTION PIPING", CMR 220 PART 100, EVERSOURCE ENERGY GAS CONSTRUCTION STANDARDS AND APPLICABLE STATE REGULATIONS.
2. THE PROPOSED PIPE IS 12.75"OD X 0.375"WT AND PRITEC COATED UNLESS OTHERWISE INDICATED BY OWNER OR ON THESE PLANS. THE PIPE WILL HAVE A MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP) OF 800 PSIG, A NORMAL OPERATING PRESSURE OF 450 PSIG AND WILL BE PRESSURE TESTED TO A MINIMUM OF 1200 PSIG FOR A MINIMUM DURATION OF 8-HOURS. TEST MEDIUM WILL BE NITROGEN.
3. CONTRACTOR WILL MAINTAIN 2-FOOT MINIMUM CLEARANCE BETWEEN THE NEW GAS PIPE AND FOREIGN STRUCTURES OR OTHER UTILITIES. ANY VARIANCE MUST BE REVIEWED AND APPROVED BY EVERSOURCE ENGINEERING.

CONSTRUCTION NOTES (CONTINUED...)

4. PROPOSED PIPE SHALL MAINTAIN A MINIMUM 2' CLEARANCE FROM EXISTING GAS PIPE.
5. ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES AND OTHER DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) INCLUDING ALL REVISIONS AND ADDENDA. CONTRACTOR IS TO SUPPLY THESE ITEMS.
6. ALL VEHICLES ARE TO BE HIGHLY VISIBLE USING ROTATING BEACONS AND BE MARKED BY USE OF TRAFFIC CONES.
7. CONTRACTOR SHALL SUPPLY TEMPORARY ROAD SIGNS AS NECESSARY.
8. ALL TRENCH EXCAVATION PROTECTION SYSTEMS SHALL BE IN COMPLIANCE WITH OSHA SPECIFICATIONS.
9. LOCATION OF ANY IDENTIFIED UNDERGROUND UTILITIES IS APPROXIMATE ONLY, AND IS NOT WARRANTED TO BE CORRECT. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT INDICATED ON THESE PLANS. ALL EXISTING UTILITIES SHALL BE VERIFIED BY CONTRACTOR FOR SERVICE, SIZE, INVERT ELEVATIONS, LOCATION, ETC.
10. CONTRACTOR TO PHYSICALLY LOCATE (POTHOLE) EXISTING EVERSOURCE 6" GAS PIPELINE PRIOR TO CONSTRUCTION. PIPE SHALL BE LOCATED AT ALL POINTS OF INFLECTION AND AT 100-FOOT INTERVALS.
11. THE PIPE COATING TYPE, LOCATION, AND LENGTH IDENTIFIED ON THE DRAWINGS IS TO BE VERIFIED PRIOR TO CONSTRUCTION BASED ON ACTUAL FIELD CONDITIONS. THE CONTRACTOR WILL PROVIDE THE APPROPRIATE PIPE COATING TYPE, LOCATION, AND LENGTH AS DETERMINED BY THE CONSTRUCTION MANAGER BASED ON ACTUAL CONDITIONS.
12. FIELD JOINT COATING SHALL BE CONDUCTED IN ACCORDANCE WITH EVERSOURCE STANDARDS AND SPECIFICATIONS.
13. MAINTAIN A MINIMUM VERTICAL DISTANCE OF 5' FROM THE ROAD SURFACE TO TOP OF PIPE.
14. CONTRACTOR MUST NOTIFY DIG SAFE (811) AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
15. CONTRACTOR SHALL INSTALL ABOVE-GRADE PIPELINE MARKERS PER EVERSOURCE STANDARDS AS REQUIRED TO DEPICT ACCURATE LOCATION OF NEW 12" PIPE. INSTALL AT BOTH SIDES OF ROADS AT ALL CROSSINGS.
16. FOR ALL WETLAND AND STREAM CROSSINGS, CONTRACTOR SHALL INSTALL BUOYANCY CONTROLS AS NEEDED.
17. EXISTING PIPELINE WILL BE ABANDONED IN-PLACE.
18. ALL TRENCHES SHALL EITHER BE BACKFILLED OR COVERED WITH STEEL SHEET AT THE END OF DAY.

PLAN VIEW LEGEND

- PROPOSED GAS MAIN
- EDGE OF PAVEMENT
- PARCEL BOUNDARY
- EASEMENT RIGHT OF WAY
- EXISTING FENCE
- CHAINLINK FENCE
- PROPERTY LINE
- EXISTING GAS MAIN
- OVERHEAD WIRE
- STONE WALL
- WALKING TRAIL
- DELINEATED WATERCOURSE CENTERLINE
- 100-FT STREAM/WETLAND BUFFER
- 200-FT OUTER RIPARIAN ZONE
- MASSDEP 100-FT WETLAND BUFFER
- 100-FT INNER RIPARIAN ZONE
- FEMA 100-YEAR FLOOD ZONE (BLSF)
- FEMA 100-YEAR FLOOD ZONE
- OPEN WATER
- BORDERING VEGETATED WETLAND (BVW)
- WETLAND FLAG
- 10-FT & 25-FT NO DISTURBANCE ZONE
- EROSION CONTROL DEVICE
- TRC TREE SURVEYED
- USACE PLOT POINT
- 1' CONTOUR
- EXISTING TREELINE
- UTILITY/LIGHT POLE
- MANHOLES
- CATCH BASIN
- FIRE HYDRANT
- PIPELINE MARKER
- CARBONITE POST
- CONCRETE BOUND W/DRILL HOLE FOUND
- BOULDER

PROFILE VIEW LEGEND

- PROPOSED GAS MAIN
- EXISTING GRADE
- PERMANENT DIVERSION
- TRENCH PLUG
- PROPOSED VALVE

ABBREVIATIONS

TBM	TEMPORARY BENCHMARK
ETW	EDGE OF TRAVEL WAY
BLSF	BORDERING LAND SUBJECT TO FLOODING

SCALE LIST

0 5 10 20 30 40
SCALE: 1"=10'

0 10 20 40 60 80
SCALE: 1"=20'

BRENDAN C. KEARNS
COMMONWEALTH OF MASSACHUSETTS
CIVIL
NO. 53669
PROFESSIONAL ENGINEER

ISSUED FOR PERMIT

No.	Description	By	Date	Appd
A	ISSUED FOR PERMIT	FAC	3/18/19	BCK
	REVISIONS			

TRI-MONT Engineering Company
Plymouth, MA.

PROJECT: HOPKINTON-ASHLAND TRANSFER LINE REPLACEMENT PROJECT

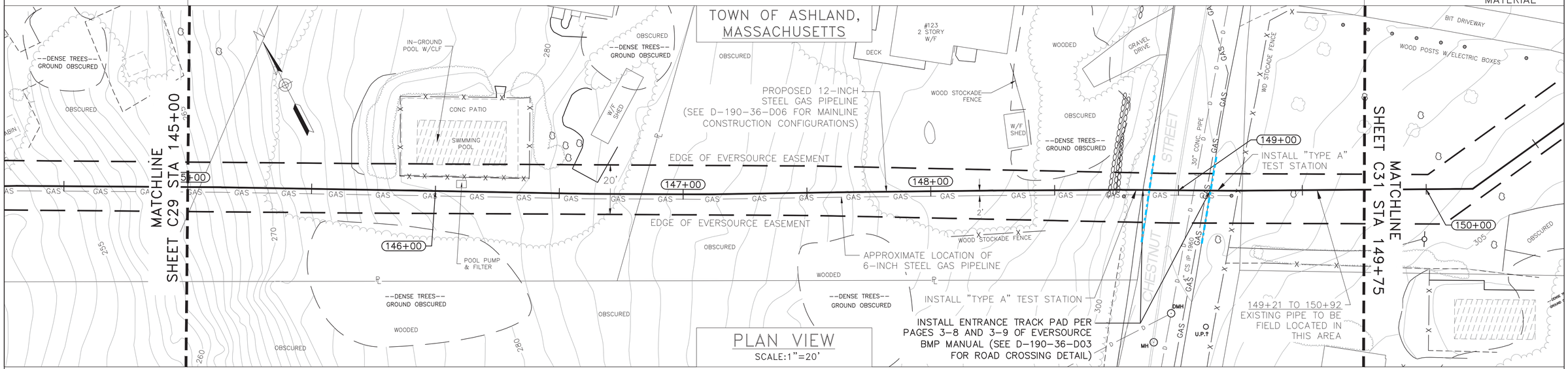
CLIENT: EVERSOURCE ENERGY

TRI-MONT	By	Date	Client	By	Date
Drawn	FAC	08/08/18	Approved		
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale: N.T.S. | Job No. D-190-36-G01 | Drawing No. | Rev. No. A

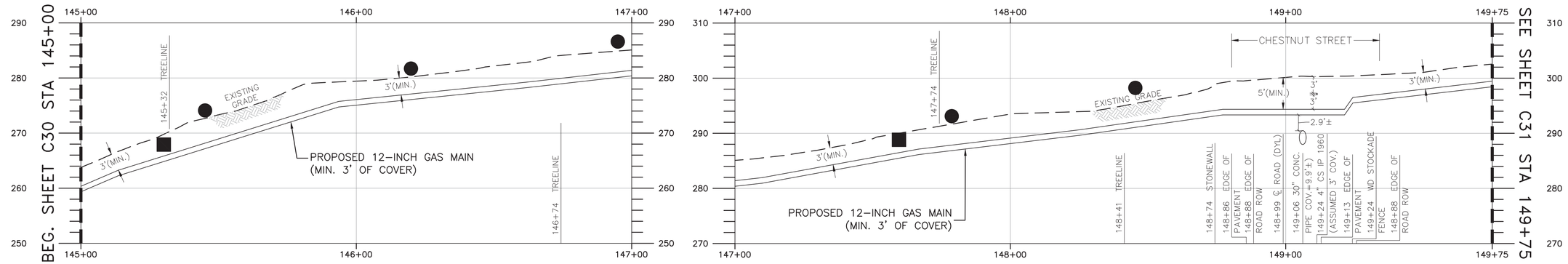
Title: GENERAL OVERVIEW

LANDOWNER	0140240000200000 N/F MICHAEL T. & FAN Z. STANBROUGH	0140240000300000 N/F JAMES J. GRASBERGER	0140240000400000 N/F DIANE M. FOSBERG	CHESTNUT STREET (SCENIC ROAD)	0140240004700000 N/F ALEX MANHAES DA SILVA
SURVEY DATA	M.L. 145+00	0°35' RT	0°5' RT	0°50' LT	1°8' LT	0°16' RT	0°19' RT	0°48' RT	0°56' LT	M.L. 149+75
	S 61° 43' E / S 62° 18' E	S 61° 38' E	S 62° 29' E	S 63° 36' E	S 63° 21' E	S 63° 02' E	S 62° 14' E	S 63° 10' E	
	145+14	145+93	146+62	147+10	147+67	148+25	148+77	149+21	
PIPE MATERIAL	12.75" OD, 0.375" WT GR. X-52, PRITEC COATED								



1) INSTALLATION TO BE IN ACCORDANCE WITH EVERSOURCE BEST MANAGEMENT PRACTICE MANUAL AND EVERSOURCE OPERATIONS & MAINTENANCE MANUAL.
2) CONSTRUCTION DEMARCATION TO BE INSTALLED ALONG THE PERIMETER OF THE PROJECT ROW/LOD. SEE DETAIL 1 ON SHEET D-190-36-D01 FOR MORE INFORMATION.
3) EROSION CONTROLS ARE TO BE INSTALLED ON THE DOWNSLOPE SIDE OF AREAS OF DISTURBANCE WHERE THERE IS POTENTIAL FOR SOIL EROSION/SEDIMENT RUNOFF. SEE APPENDIX A OF EVERSOURCE BMP MANUAL FOR DETAILS ON INSTALLATION OF EROSION CONTROLS.
4) EXTREME CARE SHALL BE TAKEN WHEN WORKING IN CLOSE PROXIMITY TO THE EXISTING STEEL EVERSOURCE GAS MAIN. WHEN CROSSING OVER THE GAS MAIN WITH EQUIPMENT, THE AREA SHALL ALWAYS BE TIMBER MATTED FOR PROTECTION.
5) TRENCH BREAKERS SHALL BE INSTALLED AND SPACED PER SHEETS A1-39 THROUGH A1-41 OF THE EVERSOURCE BMP MANUAL. TRENCH BREAKERS SHALL ALSO BE INSTALLED AT THE LIMITS OF WATERWAYS AND WETLANDS.

BUOYANCY CONTROL
(SEE SHEET D-190-36-D01 FOR DETAIL)



PROFILE VIEW
HORIZONTAL SCALE:1"=20'
VERTICAL SCALE:1"=10'

BRENDAN C. KEARNS
COMMONWEALTH OF MASSACHUSETTS
CIVIL
NO. 53669
REGISTERED PROFESSIONAL ENGINEER

0 5 10 20 30 40
SCALE: 1"=10'

0 10 20 40 60 80
SCALE: 1"=20'

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No.	Description	By	Date	Appd.
	REVISIONS			
A	ISSUED FOR PERMIT	FAC	3/18/19	BCK

TRI-MONT Engineering Company
Plymouth, MA.

PROJECT
HOPKINTON-ASHLAND TRANSFER LINE REPLACEMENT PROJECT

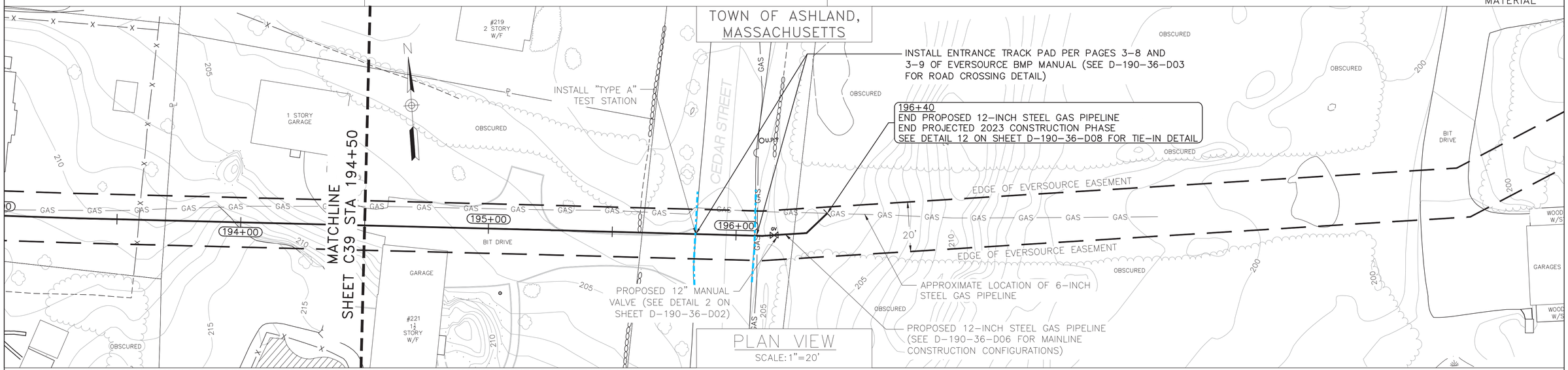
TRI-MONT	By	Date	Client	By	Date
Drawn	FAC	08/08/18	Approved		
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale: 1"=20' | Job No. | Drawing No. D-190-36-C30 | Rev. No. A

CLIENT
EVERSOURCE ENERGY

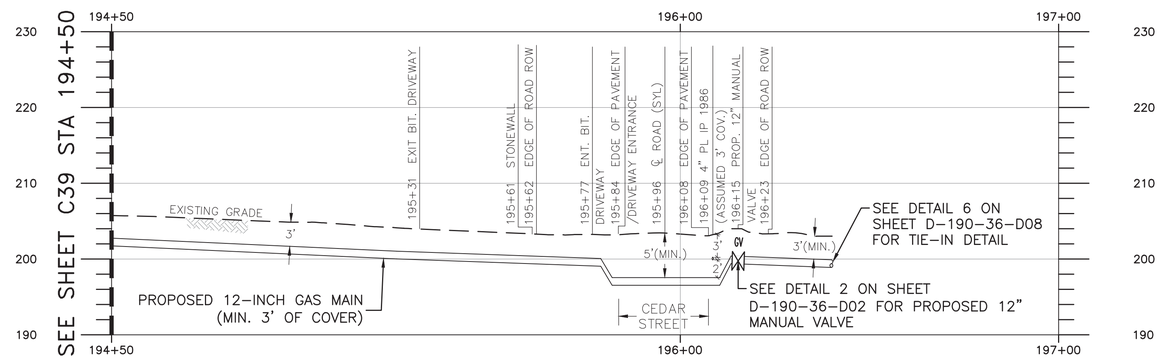
Title
12" PIPELINE ALIGNMENT SHEETS
HOPKINTON & ASHLAND, MA
SHEET 30

	0140250009700000 N/F KATHLEEN H. LOHNES	CEDAR STREET (SCENIC ROAD)	0140250033400000 N/F LEDGEMERE CONDOMINIUM CORPORATION "THE STARLIGHT VILLAGE CONDOMINIUM"	LANDOWNER
M.L. 194+50	S 84° 32' E 0°7' RT 195+25	S 84° 25' E 5°6' LT 196+10	S 89° 31' E 40°2' LT 196+28	N 50° 27' E END 196+40	SURVEY DATA
	12.75" OD, 0.375" WT GR. X-52, PRITEC COATED				PIPE MATERIAL



1) INSTALLATION TO BE IN ACCORDANCE WITH EVERSOURCE BEST MANAGEMENT PRACTICE MANUAL AND EVERSOURCE OPERATIONS & MAINTENANCE MANUAL.
2) CONSTRUCTION DEMARCATION TO BE INSTALLED ALONG THE PERIMETER OF THE PROJECT ROW/LOD. SEE DETAIL 1 ON SHEET D-190-36-D01 FOR MORE INFORMATION.
3) EROSION CONTROLS ARE TO BE INSTALLED ON THE DOWNSLOPE SIDE OF AREAS OF DISTURBANCE WHERE THERE IS POTENTIAL FOR SOIL EROSION/SEDIMENT RUNOFF. SEE APPENDIX A OF EVERSOURCE BMP MANUAL FOR DETAILS ON INSTALLATION OF EROSION CONTROLS.
4) EXTREME CARE SHALL BE TAKEN WHEN WORKING IN CLOSE PROXIMITY TO THE EXISTING STEEL EVERSOURCE GAS MAIN. WHEN CROSSING OVER THE GAS MAIN WITH EQUIPMENT, THE AREA SHALL ALWAYS BE TIMBER MATTED FOR PROTECTION.
5) TRENCH BREAKERS SHALL BE INSTALLED AND SPACED PER SHEETS A1-39 THROUGH A1-41 OF THE EVERSOURCE BMP MANUAL. TRENCH BREAKERS SHALL ALSO BE INSTALLED AT THE LIMITS OF WATERWAYS AND WETLANDS.

BUOYANCY CONTROL
(SEE SHEET D-190-36-D01 FOR DETAIL)



PROFILE VIEW
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=10'

BRENDAN C. KEARNS
COMMONWEALTH OF MASSACHUSETTS
CIVIL
NO. 53669
REGISTERED PROFESSIONAL ENGINEER

0 5 10 20 30 40
SCALE: 1"=10'

0 10 20 40 60 80
SCALE: 1"=20'

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	REVISIONS			
A	ISSUED FOR PERMIT	FAC	3/18/19	BCK

TRI-MONT Engineering Company
Plymouth, MA.

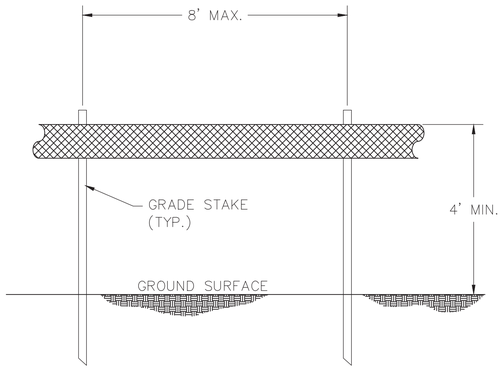
PROJECT
HOPKINTON-ASHLAND TRANSFER LINE REPLACEMENT PROJECT

TRI-MONT	By	Date	Client	By	Date
Drawn	FAC	08/08/18	Approved		
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale: 1"=20' | Job No. D-190-36 | Drawing No. C40 | Rev. No. A

CLIENT
EVERSOURCE ENERGY

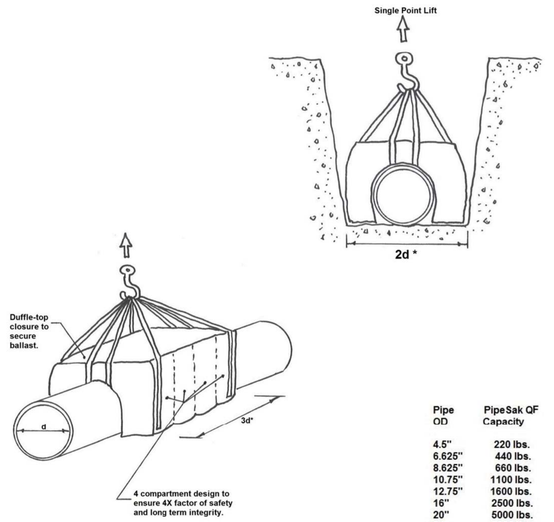
Title
12" PIPELINE ALIGNMENT SHEETS
HOPKINTON & ASHLAND, MA
SHEET 40



NOTES:

1. BARRIER MESH TAPE OR ROPE SHALL BE INSTALLED ALONG THE PERIMETER OF THE PROJECT ARE TO DEMARCATE THE LIMIT OF DISTURBANCE. NO EARTHWORK OR STORAGE OF MATERIALS SHALL BE CONDUCTED BEYOND THIS LIMIT WITHOUT PRIOR APPROVAL.
2. USE 3" ORANGE BARRIER MESH TAPE OR 1/2" YELLOW POLYPROPYLENE ROPE.
3. WITHIN 50' OF WATER RESOURCE AREAS, USE 2–3 ROWS OF TAPE OR ROPE. BEYOND 50' OF WATER RESOURCE AREAS USE 1 ROW OF TAPE OR ROPE.
4. TAPE OR ROPE MAY BE FASTENED TO STAKES, TREES, OR OTHER APPROPRIATE FIXED OBJECTS.
5. PROJECT DEMARCATION SHALL NOT CROSS ACTIVE ACCESS ROUTES (E.G. ROADS). PROJECT DEMARCATION MAY CROSS RESOURCES AREAS WITH EXCEPTION OF LARGER WATER BODIES WHERE IT IS NOT FEASIBLE OR ADVISABLE.
6. PROJECT DEMARCATION SHALL REMAIN IN PLACE AND BE MAINTAINED/REPLACED AS NEEDED UNTIL FINAL STABILIZATION IN THE AREA HAS BEEN ACHIEVED.

1 PERIMETER CONTROL – BARRIER MESH TAPE OR ROPE
NOT TO SCALE



Pipe OD	PipeSak QF Capacity
4.5"	220 lbs.
6.625"	440 lbs.
8.625"	660 lbs.
10.75"	1100 lbs.
12.75"	1600 lbs.
16"	2500 lbs.
20"	5000 lbs.
24"	5000 lbs.
30"	7000 lbs.
36"	9000 lbs.
42"	12,500 lbs.
48"	14,000 lbs.
56"	18,000 lbs.

NOTES:

1) PIPESAK ® SADDLE WEIGHTS TO BE INSTALLED PER MANUFACTURER INSTRUCTIONS.
2) PIPESAK® SADDLE WEIGHTS TO BE INSTALLED AT MINIMUM FORTY (40) FOOT SPACING AS SHOWN ON PLANS.
3) BUOYANCY CONTROL MEASURES ARE TO BE INSTALLED AT ALL CROSSINGS OF WETLANDS, WETLAND BUFFERS, STREAMS/RIVERS, AND STREAM/RIVER BUFFERS AS SHOWN ON PLANS.
4) CONTRACTOR IS RESPONSIBLE FOR FILLING (INCLUDING PROVIDING THE FILLING MATERIAL) AND INSTALLING THE SADDLE WEIGHTS AS SHOWN ON PLANS.

2 BUOYANCY CONTROL
NOT TO SCALE

Brendan Kearns
COMMONWEALTH OF MASSACHUSETTS
BRENDAN C. KEARNS
CIVIL
NO. 53669
REGISTERED PROFESSIONAL ENGINEER

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	REVISIONS			

TRI–MONT Engineering Company
Plymouth, MA.

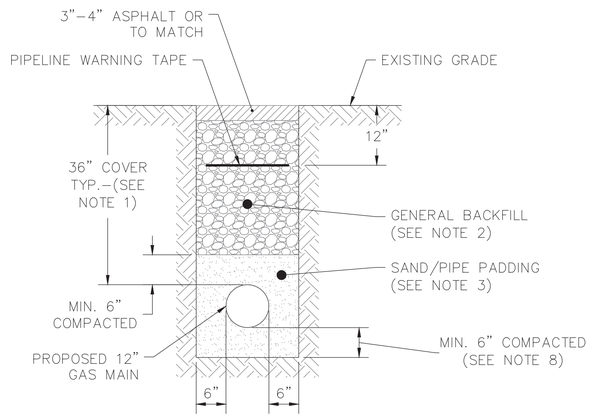
PROJECT
HOPKINTON–ASHLAND TRANSFER LINE REPLACEMENT PROJECT

CLIENT
EVERSOURCE ENERGY

TRI–MONT	By	Date	Client	By	Date
Drawn	FAC	08/08/18	Approved		
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale: N.T.S.
Job No. D–190–36–D01
Drawing No.
Rev. No. A

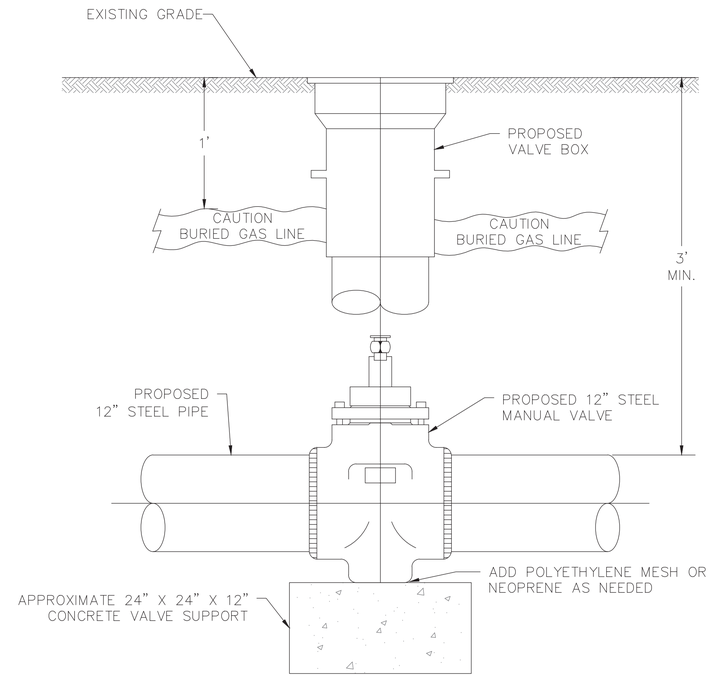
Title
TYPICAL DETAILS
PERIMETER & BUOYANCY CONTROLS



NOTES:

1. MINIMUM PIPELINE COVER IS 36" IN TYPICAL AREAS. SEE PROJECT DRAWINGS FOR MORE INFORMATION ON AREAS WHERE DEPTH OF COVER IS OTHER THAN 36".
2. GENERAL BACKFILL SHALL CONTAIN NO STONES OR CLODS GREATER THAN 6".
3. PIPE PADDING SHALL BE SAND OR ROCK FREE SOIL (NO ROCKS LARGER THAN 3/8" DIAMETER.
4. IN NATURAL RESOURCE AREAS, BACKFILL SHALL BE NATIVE MATERIAL AND SHALL MATCH PROFILE DEPTH OF ADJACENT NATIVE, UNDISTURBED SOIL.
5. PROPOSED PIPE SHALL MAINTAIN MIN. 2' HORIZONTAL AND VERTICAL SEPARATION FROM ALL EXISTING UTILITIES.
6. BACKFILL SHALL BE COMPACTED IN 12" LIFTS IN ACCORDANCE WITH EVERSOURCE STANDARDS.
7. ALL TRENCH CONSTRUCTION SHALL CONFORM TO APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
8. IN AREAS OF CONSOLIDATED ROCK A MINIMUM DEPTH OF PIPE PADDING UNDERNEATH PIPE TO BE 6".

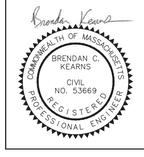
1 OPEN CUT TRENCHING
NOT TO SCALE



NOTES:

1. CONTRACTOR TO FURNISH ALL MATERIALS.
2. CONTRACTOR SHALL CLEAN, COAT, AND WRAP ALL FITTINGS AND PIPE WHICH WILL COME IN CONTACT WITH THE CONCRETE.
3. CONTRACTOR SHALL WRAP THE FITTINGS AND PIPE WITH "NEOPRENE" OR "TUFF–N–NUFF ROCKSHIELD" OR EQUAL POLYETHYLENE MESH.
4. CONTRACTOR SHALL POUR CONCRETE TO CENTERLINE OF THE HORIZONTAL PIPING.
5. THE CONTRACTOR SHALL NOT PLACE BACKFILL ON TOP OF THE CONCRETE UNTIL THE CONCRETE HAS CURED (7–DAY MINIMUM).
6. CONTRACTOR SHALL VERIFY THAT THE CONCRETE HAS A SOLID FOOTING.
7. RIGID FORMWORK SHALL NOT BE REQUIRED UNLESS THE CO–MINGLING OF SOILS AND CONCRETE WILL BE MINIMIZED.
8. THE CONCRETE SUPPORT BLOCK IS NOT DESIGNED NOR INTENDED FOR USE AS A THRUST BLOCK.

2 PROPOSED 12" MANUAL VALVE
NOT TO SCALE



ISSUED PERMIT

No.	Description	By	Date	Appd
	REVISIONS			
A	ISSUED FOR PERMIT	FAC	3/18/19	BCK

TRI–MONT Engineering Company
Plymouth, MA.

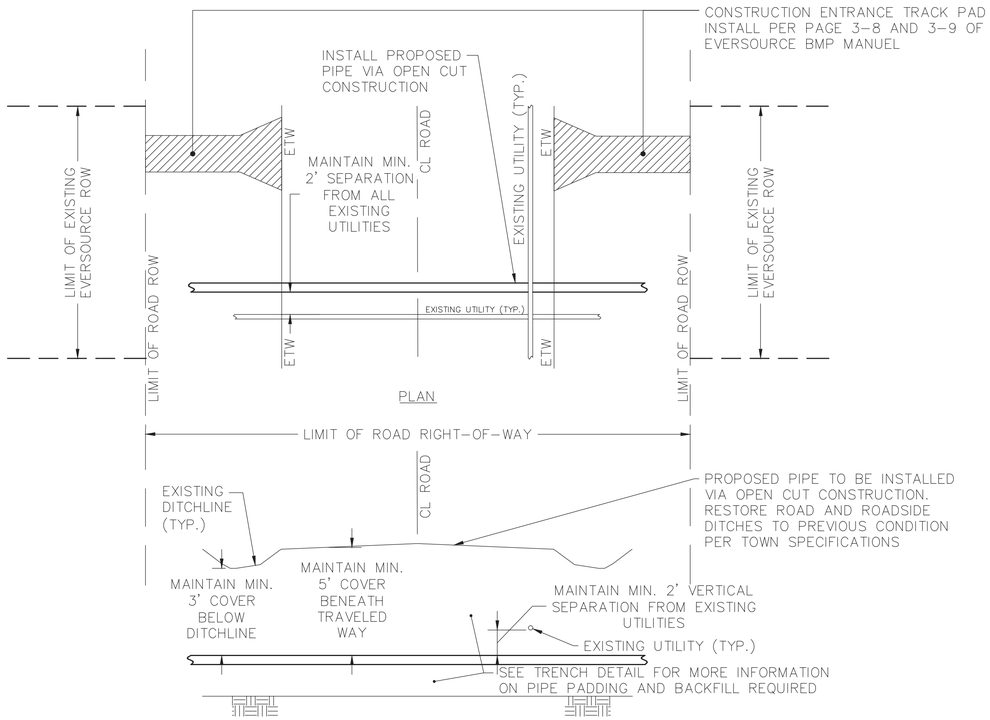
PROJECT
HOPKINTON–ASHLAND TRANSFER LINE REPLACEMENT PROJECT

TRI–MONT	By	Date	Client	By	Date
Drawn	FAC	08/08/18	Approved		
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale: N.T.S. | Job No. D–190–36–D02 | Drawing No. | Rev. No. A

CLIENT
EVERSOURCE ENERGY

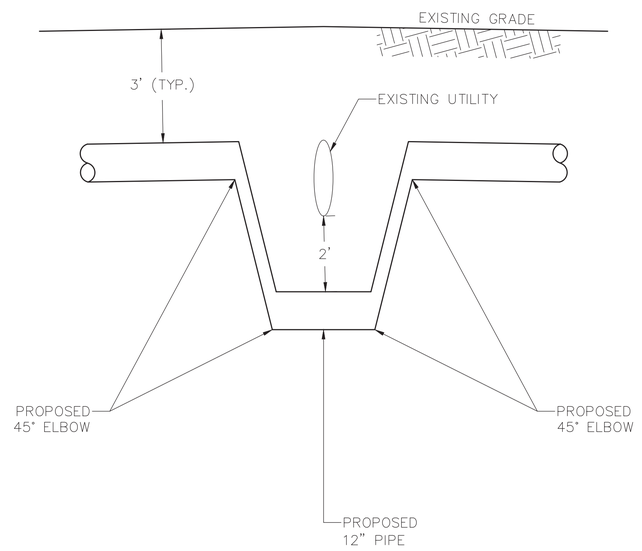
Title
TYPICAL DETAILS
OPEN CUT TRENCHING
AND MANUAL VALVE



NOTES:

1. SEE TRENCH DETAIL ON D-190-36-D02 FOR TRENCH BACKFILL INFORMATION.
2. PERFORM EROSION CONTROLS IN ACCORDANCE WITH EVERSOURCE BEST MANAGEMENT PRACTICE MANUEL FOR MASSACHUSETTS AND CONNECTICUT.
3. TRAFFIC CONTROL TO BE IN ACCORDANCE WITH MUTCD STANDARDS.

1 TYPICAL ROAD CROSSING
NOT TO SCALE



NOTES:

1. PROPOSED PIPE SHALL MAINTAIN A MINIMUM OF 2' VERTICAL CLEARANCE FROM EXISTING UTILITY.

2 EXISTING UTILITY OFFSET CROSSING
NOT TO SCALE

Brendan Kearns
COMMONWEALTH OF MASSACHUSETTS
BRENDAN C. KEARNS
CIVIL
NO. 53669
REGISTERED PROFESSIONAL ENGINEER

ISSUED
PERMIT

No.	Description	By	Date	Appd
A	ISSUED FOR PERMIT	FAC	3/18/19	BCK
	REVISIONS			

TRI-MONT Engineering Company
Plymouth, MA.

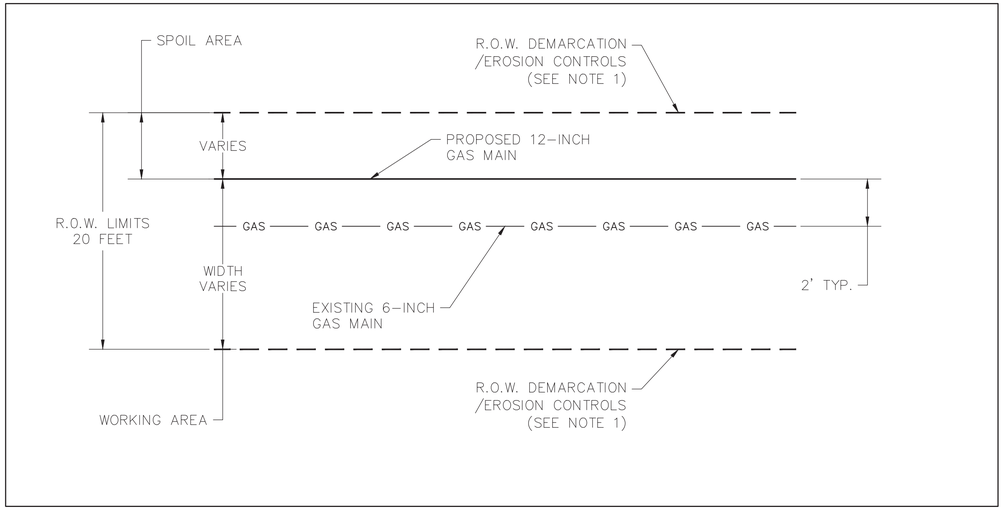
PROJECT
HOPKINTON-ASHLAND TRANSFER LINE REPLACEMENT PROJECT

CLIENT
EVERSOURCE ENERGY

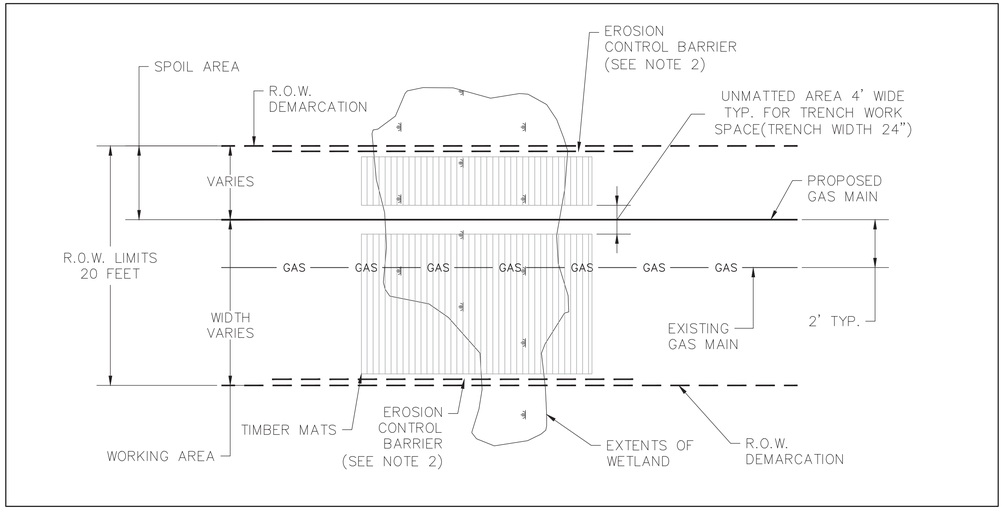
TRI-MONT	By	Date	Client	By	Date
Drawn	FAC	08/08/18	Approved		
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale:	Job No.	Drawing No.	Rev. No.
N.T.S.	D-190-36-D03		A

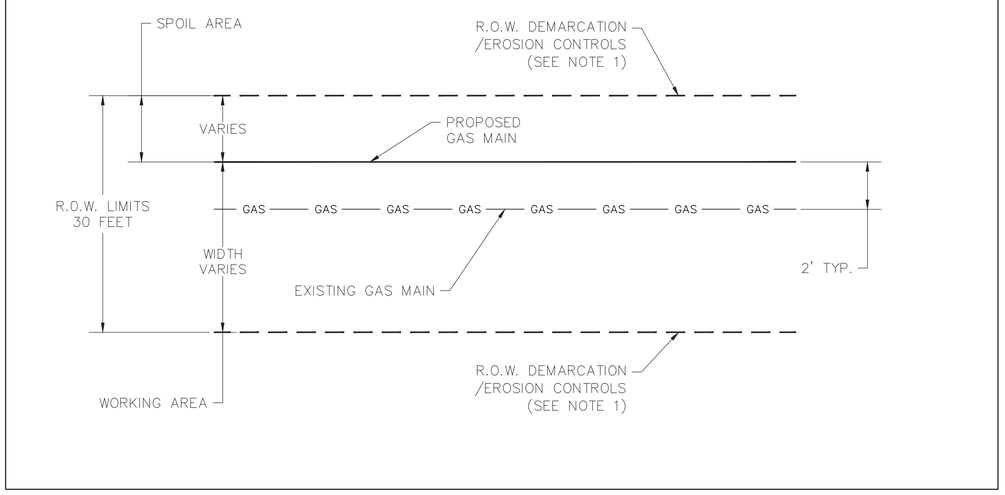
Title
TYPICAL DETAILS
ROAD AND UTILITY
OFFSET CROSSINGS



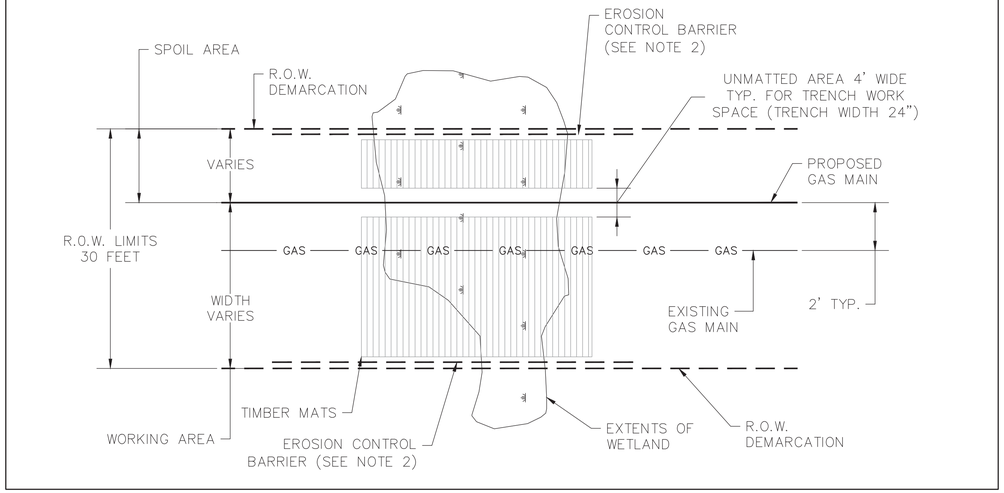
1 MAINLINE CONSTRUCTION TYPICAL – 20' WIDE ROW
NOT TO SCALE



2 MAINLINE CONSTRUCTION WETLAND CROSSING – 20' WIDE ROW
NOT TO SCALE



3 MAINLINE CONSTRUCTION TYPICAL – 30' WIDE ROW
NOT TO SCALE



4 MAINLINE CONSTRUCTION WETLAND CROSSING – 30' WIDE ROW
NOT TO SCALE

NOTES:
1. INSTALL CONSTRUCTION LIMIT DEMARCATION PER SHEET D-190-36-D01 OF THIS PLAN SET. EROSION CONTROLS ARE TO BE INSTALLED ON THE DOWNSLOPE SIDE OF AREAS OF DISTURBANCE WHERE THERE IS POTENTIAL FOR EROSION/SEDIMENT RUNOFF. SEE SHEETS A1-6 THROUGH A1-11 OF THE EVERSOURCE BMP MANUAL FOR DETAILS ON THE INSTALLATION OF SILT FENCE AND STRAW/HAYBALES.
2. EROSION CONTROLS ARE TO BE INSTALLED ON BOTH SIDES OF AREAS OF DISTURBANCE IN WETLAND AREAS. SEE SHEETS A1-6 THROUGH A1-11 OF THE EVERSOURCE BMP MANUAL FOR DETAILS ON INSTALLATION OF SILT FENCE AND STRAW/HAYBALES.

COMMONWEALTH OF MASSACHUSETTS
BRENDAN C. KEARNS
CIVIL
NO. 53669
REGISTERED PROFESSIONAL ENGINEER

ISSUED PERMIT

No.	Description	By	Date	Appd.
	REVISIONS			
A	ISSUED FOR PERMIT	FAC	3/18/19	BCK

TRI-MONT Engineering Company
Plymouth, MA.

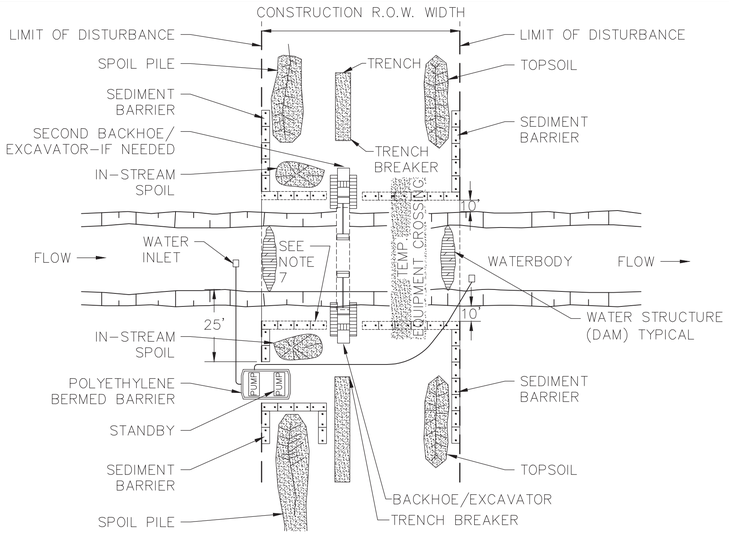
PROJECT
HOPKINTON-ASHLAND TRANSFER LINE REPLACEMENT PROJECT

TRI-MONT	By	Date	Client	By	Date
Drawn	FAC	08/08/18	Approved		
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale: N.T.S. | Job No. | Drawing No. D-190-36-D04 | Rev. No. A

CLIENT
EVERSOURCE ENERGY

Title
TYPICAL DETAILS TYPICAL & WETLAND EXCAVATION CROSS-SECTION

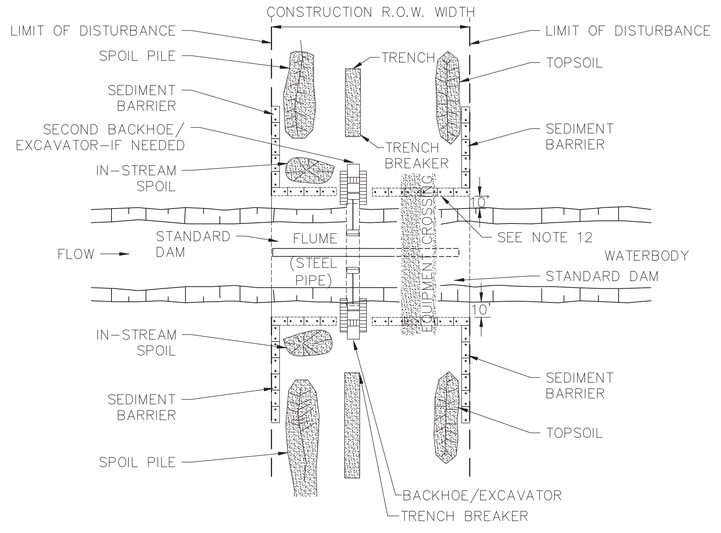


PLAN VIEW

NOTES:

1. THIS METHOD APPLIES TO WATERBODIES WITH LIMITED FLOW AT TIME OF CONSTRUCTION WHERE DOWNSTREAM SILTATION MUST BE AVOIDED AND THE CROSSING WIDTH IS NOT PROHIBITIVE.
2. SCHEDULE CROSSING DURING LOW FLOW PERIOD IF POSSIBLE.
3. COMPLETE ALL IN–STREAM ACTIVITIES AS EXPEDIENTLY AS POSSIBLE.
4. NO REFUELING OF MOBILE EQUIPMENT WITHIN 100 FEET OF WATERBODY.
5. INSTALL TEMPORARY EQUIPMENT CROSSING, IF REQUIRED.
6. IN AGRICULTURAL LAND, STRIP TOPSOIL FROM SPOIL STORAGE AREA.
7. CONSTRUCT SEDIMENT BARRIERS (STRAW BALES AND/OR SILT FENCE) TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING INTO WATERBODY. CONSTRUCTED SEDIMENT BARRIERS SHALL EXTEND ALONG THE SIDES OF THE SPOIL AND TOPSOIL STOCKPILES AND ACROSS THE ENTIRE CONSTRUCTION R.O.W. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
8. CONSTRUCT UPSTREAM STRUCTURE (DAM) FOLLOWED BY DOWNSTREAM STRUCTURE (DAM). WATER STRUCTURES' (AQUA DAM, JERSEY BARRIERS, SAND BAGS, STEEL PLATE, POLYETHYLENE LINER, ETC.) FINAL LOCATION WILL BE APPROVED BY THE ENVIRONMENTAL INSPECTOR.
9. SIZE PUMPS FOR DIVERSION OF ENTIRE STREAM FLOW. CONTRACTOR SHALL MAINTAIN 100% SPARE PUMPING CAPACITY ON SITE. PUMPS SHALL BE INSTALLED ON POLYETHYLENE BARRIERS FOR FUEL/OIL SPILL CONTAINMENT. PUMP INTAKES WILL BE SCREENED TO PREVENT ENTRAPMENT OF FISH. CONTRACTOR SHALL MONITOR PUMPS AND WATER STRUCTURES DAILY UNTIL THE CROSSING INSTALLATION IS COMPLETE. SHOULD LEAKAGE AT THE DAM STRUCTURES OCCUR, CONTRACTOR SHALL DEWATER BETWEEN THE STRUCTURES THROUGH AN APPROPRIATE FILTER AND ONTO A WELL VEGETATED UPLAND AREA. NO HEAVILY SILT–LADEN WATER SHALL BE DISCHARGED INTO THE STREAM.
10. LEAVE TRENCH BREAKERS AT STREAM BANK EDGE UNTIL JUST PRIOR TO PIPE INSTALLATION.
11. COMPLETE CONSTRUCTION OF IN–STREAM PIPE SECTION. WEIGHT PIPE AS NECESSARY PRIOR TO COMMENCEMENT OF IN–STREAM ACTIVITY.
12. TRENCH THROUGH WATERBODY AS EXPEDIENTLY AS PRACTICAL. INSTALL TEMPORARY TRENCH BREAKERS, IF NECESSARY, TO CONTROL WATER FLOW AND TRENCH SLOUGHING.
13. MAINTAIN STREAM FLOW THROUGHOUT CROSSING CONSTRUCTION.
14. LOWER–IN PIPE, INSTALL TRENCH PLUG AND BACKFILL IMMEDIATELY.
15. BACKFILL WITH NATIVE MATERIAL.
16. RESTORE WATERBODY CHANNEL TO APPROXIMATE PRE–CONSTRUCTION PROFILE AND SUBSTRATE.
17. DISMANTLE DOWNSTREAM WATER STRUCTURE (DAM) AND UPSTREAM WATER STRUCTURE (DAM) AFTER TRENCH BACKFILL.
18. RESTORE STREAM BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.

1 DAM & PUMP
NOT TO SCALE

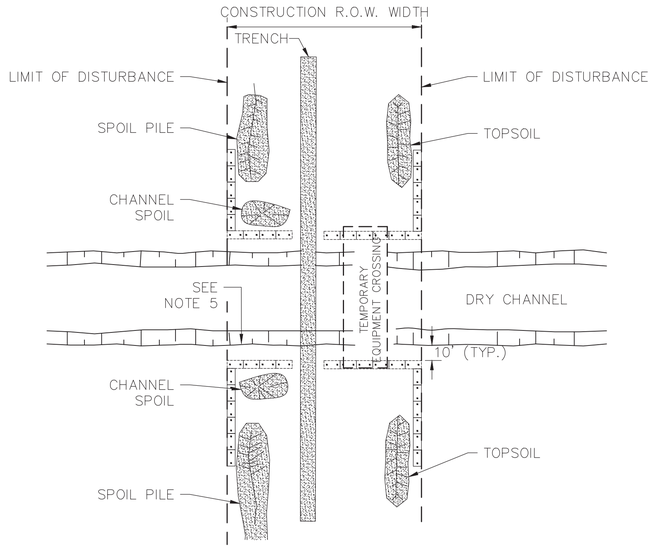


PLAN VIEW

NOTES:

1. METHOD APPLIES TO WATERBODIES WHERE DOWNSTREAM SILTATION MUST BE AVOIDED. FLUMES ARE GENERALLY NOT RECOMMENDED FOR USE ON WATERBODIES WITH A BROAD UNCONFINED CHANNEL, PERMEABLE SUBSTRATE, EXCESSIVE DISCHARGE, OR WHERE A SIGNIFICANT AMOUNT OF BED OR BANK ALTERATION IS REQUIRED TO INSTALL FLUMES OR DAMS.
2. SCHEDULE CROSSING DURING LOW FLOW PERIOD IF POSSIBLE.
3. COMPLETE ALL WATERCOURSE ACTIVITIES AS EXPEDIENTLY AS POSSIBLE.
4. NO REFUELING OF MOBILE EQUIPMENT WITHIN 100 FEET OF WATERBODY.
5. INSTALL TEMPORARY EQUIPMENT CROSSING.
6. IN AGRICULTURAL LAND, STRIP TOPSOIL FROM SPOIL STORAGE AREA.
7. IN–STREAM SPOIL TO BE STORED ON BANKS A MINIMUM OF 10 FEET FROM THE TOP OF THE BANK.
8. LEAVE TRENCH BREAKERS AT THE STREAM BANK EDGE UNTIL JUST PRIOR TO PIPE INSTALLATION.
9. SIZE FLUME TO HANDLE 150% ANTICIPATED FLOWS. INSTALL FLUME IN WATERCOURSE AND MAINTAIN CORRECT ALIGNMENT UNTIL REMOVED.
10. CONSTRUCT UPSTREAM DAM FOLLOWED BY DOWNSTREAM DAM. INSTALL A FLANGE ON UPSTREAM END OF FLUME AND SEAL TO SUBSTRATE WITH SANDBAGS AND POLYETHYLENE LINER WHERE NECESSARY TO ENSURE A WATERTIGHT BARRIER. "KEY" DAMS INTO BANKS OR CONSTRUCT SECONDARY DAM, IF NECESSARY.
11. PUMP STREAM CHANNEL BETWEEN DAMS, IF NECESSARY. DISCHARGE WATER THROUGH A DEWATERING STRUCTURE AND ONTO A STABLE WELL VEGETATED AREA TO PREVENT EROSION AND SEDIMENTATION. NO HEAVILY SILT–LADEN WATER MAY BE DISCHARGED IN THE STREAM.
12. CONSTRUCT SEDIMENT BARRIERS (STRAW BALES AND/OR SILT FENCE) TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERCOURSE. CONSTRUCTED SEDIMENT BARRIERS SHALL EXTEND ALONG THE SIDES OF THE STOCKPILES AND THE ENDS OF DAMS. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
13. COMPLETE PREFABRICATION OF IN–STREAM PIPE SECTION AND WEIGHT PIPE AS NECESSARY PRIOR TO COMMENCEMENT OF IN–STREAM ACTIVITY.
14. TRENCH THROUGH WATERCOURSE. INSTALL TEMPORARY TRENCH BREAKERS, IF NECESSARY, TO CONTROL WATER FLOW AND TRENCH SLOUGHING.
15. MAINTAIN STREAM FLOW, IF PRESENT, THROUGH FLUME THROUGHOUT CROSSING CONSTRUCTION.
16. LOWER–IN PIPE, INSTALL TRENCH PLUG AND BACKFILL IMMEDIATELY.
17. BACKFILL WITH NATIVE MATERIAL.
18. RESTORE WATERCOURSE CHANNEL TO APPROXIMATE PRE–CONSTRUCTION PROFILE AND SUBSTRATE.
19. RESTORE STREAM BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.

2 FLUME
NOT TO SCALE



PLAN VIEW

NOTES:

1. METHOD APPLIES TO CROSSINGS WHERE NO FLOWING WATER IS PRESENT AT THE TIME OF CROSSING.
2. NO REFUELING OF MOBILE EQUIPMENT WITHIN 100 FEET OF DRY CHANNEL. REFUEL STATIONARY EQUIPMENT AS PER THE SPCC PLAN.
3. INSTALLATION OF TEMPORARY EQUIPMENT CROSSING IS REQUIRED AND MUST BE BUILT IN ACCORDANCE WITH PAGES 3–35 THROUGH 3–40 OF THE EVERSOURCE BMP MANUAL.
4. IN AGRICULTURAL LAND, STRIP TOPSOIL FROM SPOIL STORAGE AREA. STOCKPILE TOPSOIL AND SPOIL SEPARATELY. TOPSOIL AND SPOIL WILL NOT BE STOCKPILED IN THE CROSSING CHANNEL AND WILL BE PLACED A MINIMUM OF 10 FEET FROM CROSSING BANKS WITHIN THE CONSTRUCTION R.O.W.
5. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. FOLLOWING CLEARING AND GRADING AND MAINTAIN UNTIL CONSTRUCTION OF THE CROSSING. EROSION CONTROL MEASURES SHALL BE REINSTALLED IMMEDIATELY FOLLOWING BACKFILLING OF TRENCH AND STABILIZATION OF BANKS. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
6. IN–STREAM SPOIL TO BE STORED OUT OF THE STREAM CHANNEL A MINIMUM OF 10 FEET FROM HIGH BANK AND WITHIN THE CONSTRUCTION R.O.W. UNLESS DEPICTED OTHERWISE IN SITE SPECIFIC CROSSING PLANS.
7. BACKFILL WITH NATIVE MATERIAL.
8. RESTORE CROSSING CHANNEL TO APPROXIMATE PRE–CONSTRUCTION PROFILE AND SUBSTRATE.
9. RESTORE CROSSING BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.
10. ALL DIMENSIONS INDICATED SHALL BE DETERMINED BY ACTUAL CONSTRUCTION CONDITIONS.

3 NON–FLOWING WATERBODY OPEN CUT TRENCH
NOT TO SCALE

Brendan C. Kearns
COMMONWEALTH OF MASSACHUSETTS
BRENDAN C. KEARNS
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TRI–MONT Engineering Company
Plymouth, MA.

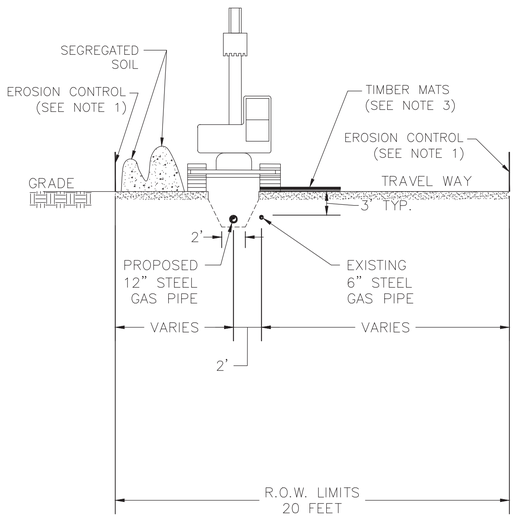
PROJECT
HOPKINTON–ASHLAND TRANSFER LINE REPLACEMENT PROJECT

CLIENT
EVERSOURCE ENERGY

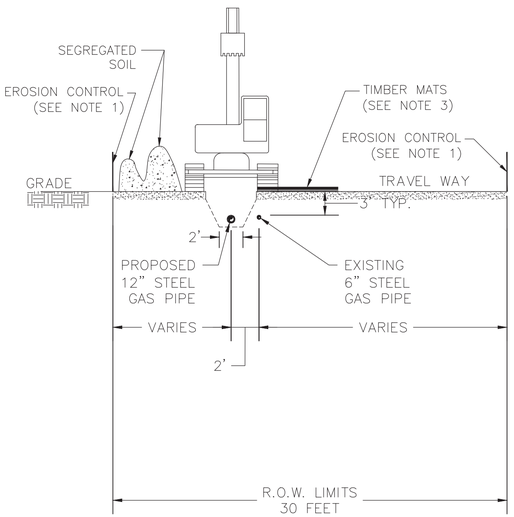
TRI–MONT	By	Date	Client	By	Date
Drawn	FAC	08/08/18	Approved		
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale: N.T.S.
Job No. D–190–36–D05
Drawing No.
Rev. No. A

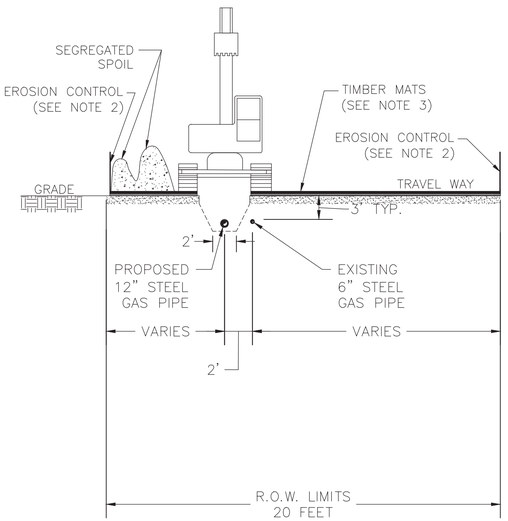
Title
TYPICAL DETAILS
OPEN CUT
WATER CROSSING



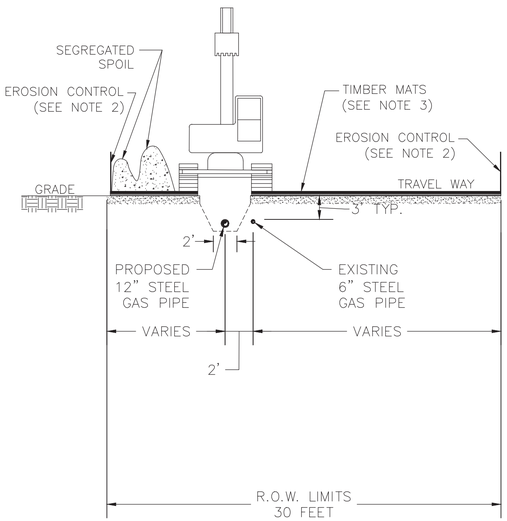
1 TYPICAL UPLAND EXCAVATION
NOT TO SCALE



2 TYPICAL UPLAND EXCAVATION
NOT TO SCALE

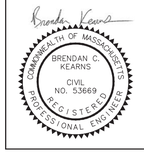


3 TYPICAL WETLAND EXCAVATION
NOT TO SCALE



4 TYPICAL WETLAND EXCAVATION
NOT TO SCALE

NOTES:
1. INSTALL CONSTRUCTION LIMIT DEMARCATION PER SHEET D-190-36-D01 OF THIS PLAN SET. EROSION CONTROLS ARE TO BE INSTALLED ON THE DOWNSLOPE SIDE OF AREAS OF DISTURBANCE WHERE THERE IS POTENTIAL FOR EROSION/SEDIMENT RUNOFF. SEE SHEETS A1-6 THROUGH A1-11 OF THE EVERSOURCE BMP MANUAL FOR DETAILS ON THE INSTALLATION OF SILT FENCE AND STRAW/HAYBALES.
2. EROSION CONTROLS ARE TO BE INSTALLED ON BOTH SIDES OF AREAS OF DISTURBANCE IN WETLAND AREAS. SEE SHEETS A1-6 THROUGH A1-11 OF THE EVERSOURCE BMP MANUAL FOR DETAILS ON INSTALLATION OF SILT FENCE AND STRAW/HAYBALES.
3. INSTALL TIMBER MATS WHEN WORKING OVER EXISTING PIPELINE AND ACROSS ENTIRE ROW IN WETLAND AREAS. EXTREME CARE SHALL BE USED WHEN WORKING ADJACENT TO EXISTING PIPELINE.
4. SEE PAGES 3-25 THROUGH 3-29 OF THE EVERSOURCE BMP MANUAL FOR DETAILS ON CONSTRUCTION MATTING.
5. ALL INSTALLATION TO BE IN ACCORDANCE WITH EVERSOURCE CONSTRUCTION STANDARDS AND AND BMP MANUAL.



ISSUED PERMIT

No.	Description	By	Date	Appd
	REVISIONS			
A	ISSUED FOR PERMIT	FAC	3/18/19	BCK

TRI-MONT Engineering Company
Plymouth, MA.

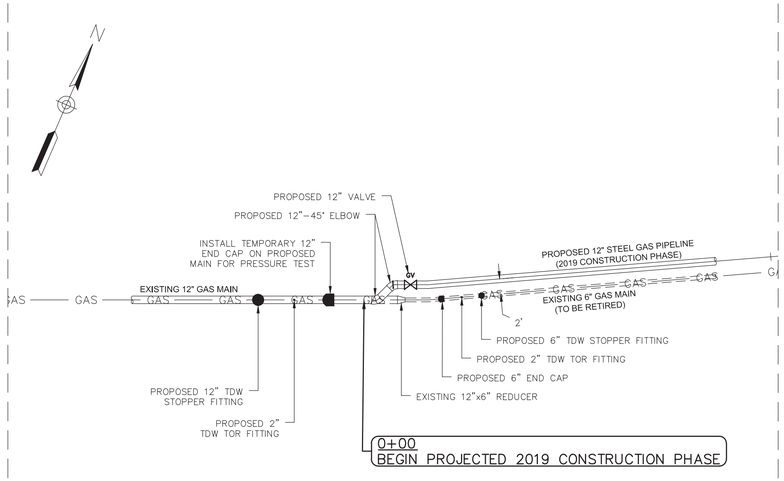
PROJECT
HOPKINTON-ASHLAND TRANSFER LINE REPLACEMENT PROJECT

CLIENT
EVERSOURCE ENERGY

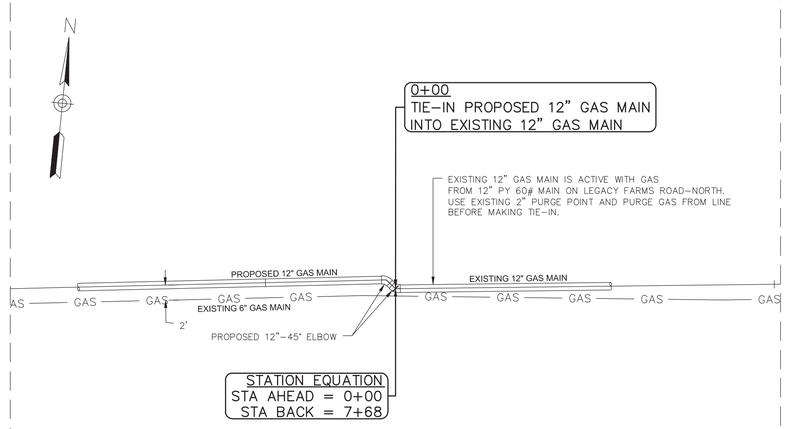
TRI-MONT	By	Date	Client	By	Date
Drawn	FAC	08/08/18	Approved		
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale: N.T.S.
Job No. / Drawing No.: D-190-36-D06
Rev. No.: A

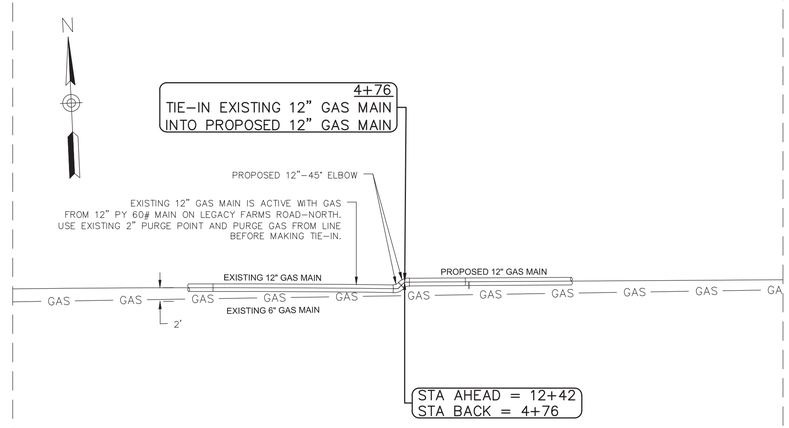
Title
TYPICAL DETAILS MAINLINE CONSTRUCTION CONFIGURATIONS



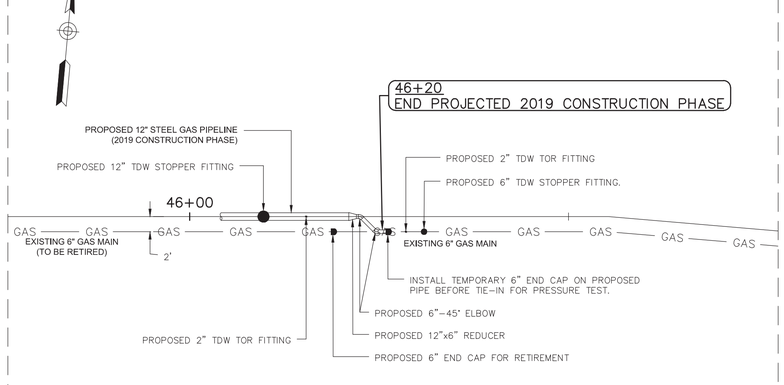
1 TIE–IN AT STA. 0+00
(BEGIN PROJECTED 2019 CONSTRUCTION PHASE)
SCALE: 1"=10'



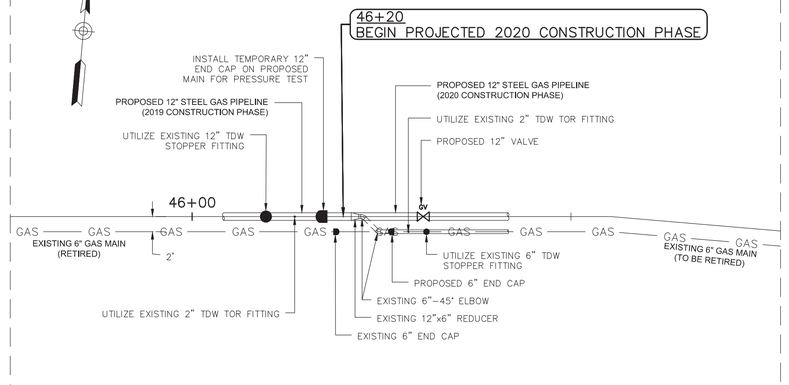
2 TIE–IN AS–BUILT PIPE
(LEGACY FARMS ROAD–NORTH)
AT STA. 7+68
(TIE–IN PROPOSED 12" GAS MAIN INTO EXISTING 12" GAS MAIN)
SCALE: 1"=10'



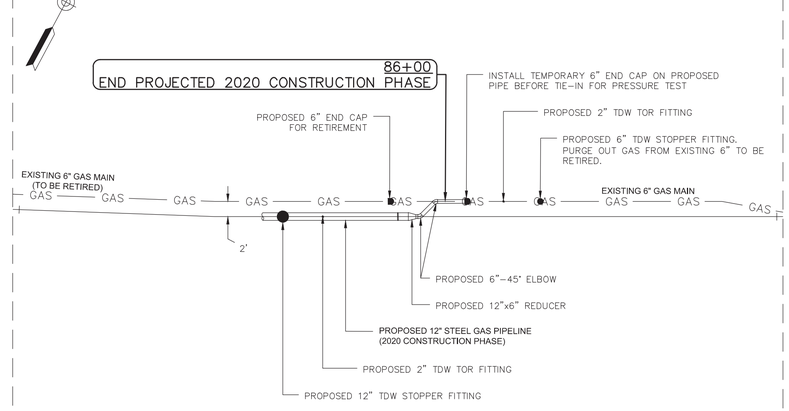
3 TIE–IN AS–BUILT PIPE
(LEGACY FARMS ROAD–NORTH)
AT STA. 12+42
(TIE–IN EXISTING 12"GAS MAIN INTO PROPOSED 12" GAS MAIN)
SCALE: 1"=10'



4 TIE–IN AT STA. 46+20
(END PROJECTED 2019 CONSTRUCTION PHASE)
SCALE: 1"=10'



5 TIE–IN AT STA. 46+20
(BEGIN PROJECTED 2020 CONSTRUCTION PHASE)
SCALE: 1"=10'



6 TIE–IN AT STA. 86+00
(END PROJECTED 2020 CONSTRUCTION PHASE)
SCALE: 1"=10'

ISSUED
PERMIT

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CIVIL
NO. 53669
COMMONWEALTH OF MASSACHUSETTS
REGISTERED PROFESSIONAL ENGINEER

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PROJECT
HOPKINTON–ASHLAND TRANSFER LINE REPLACEMENT PROJECT

CLIENT
EVERSOURCE ENERGY

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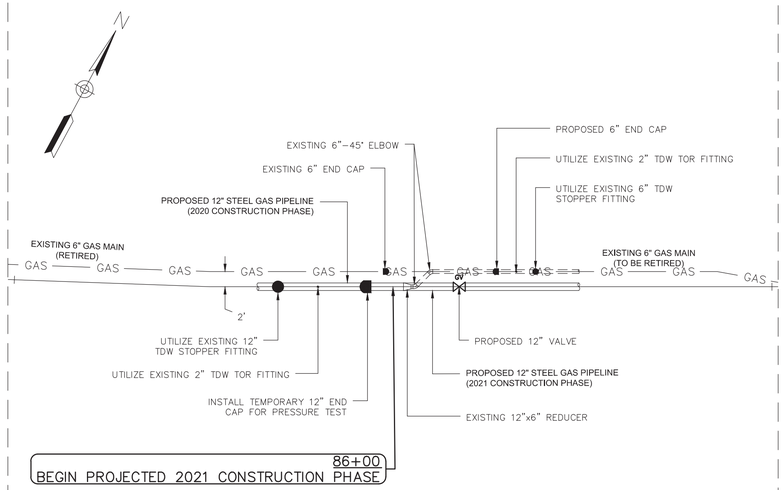
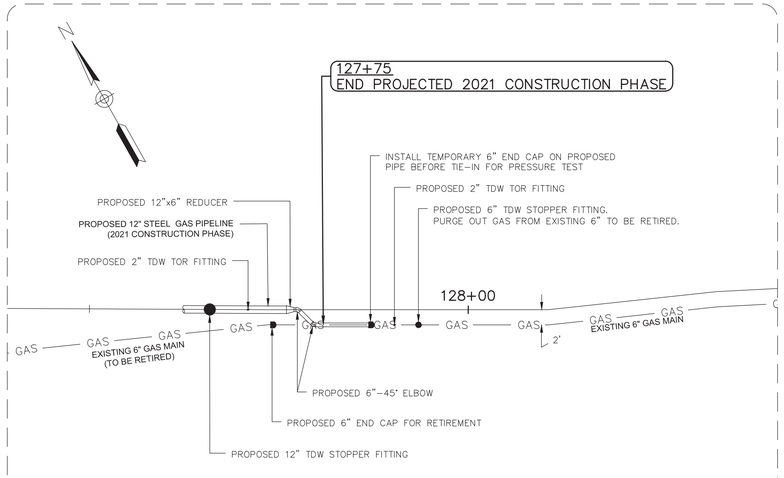
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale:	Job No.	Drawing No.	Rev. No.
N.T.S.	D–190–36	D07	A

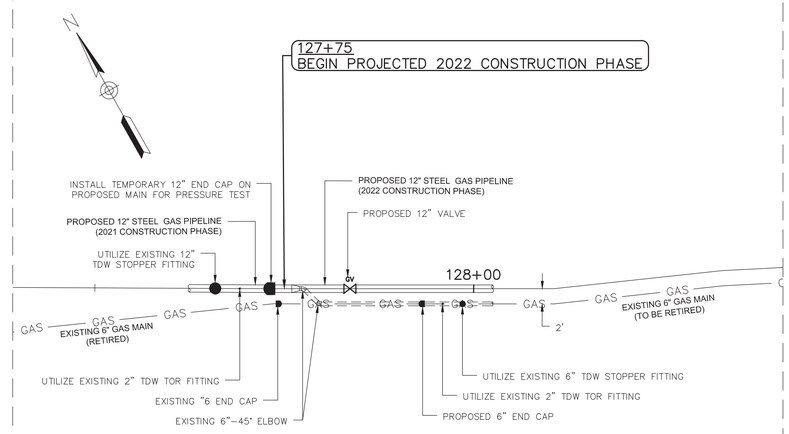
Title
TYPICAL DETAILS TIE–IN



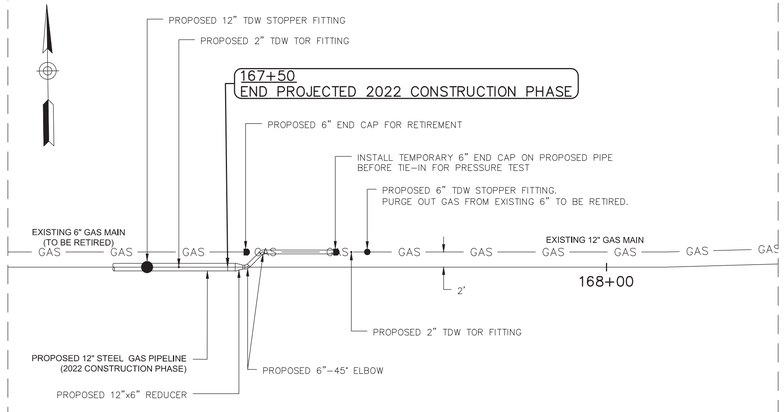
7 TIE–IN AT STA. 86+00
(BEGIN PROJECTED 2021 CONSTRUCTION PHASE)
SCALE: 1"=10'



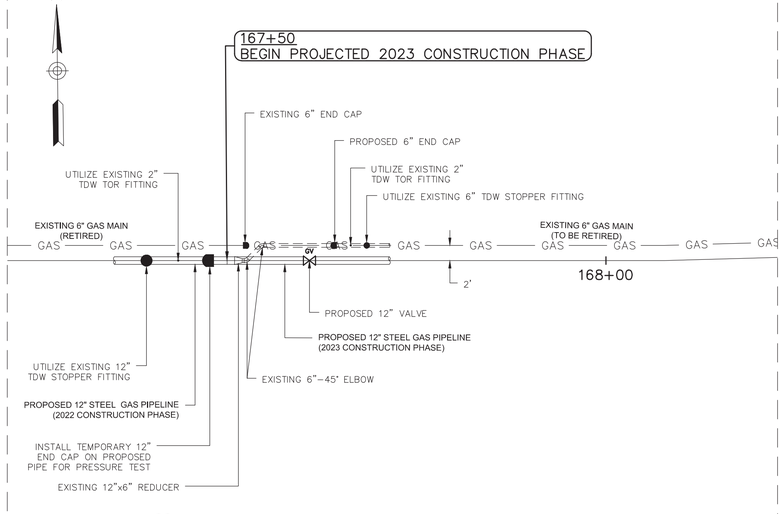
8 TIE–IN AT STA. 127+75
(END PROJECTED 2021 CONSTRUCTION PHASE)
SCALE: 1"=10'



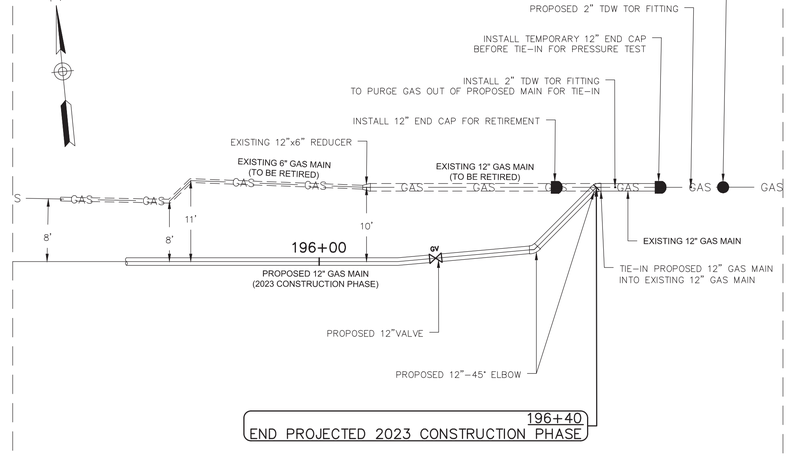
9 TIE–IN AT STA. 127+75
(BEGIN PROJECTED 2022 CONSTRUCTION PHASE)
SCALE: 1"=10'



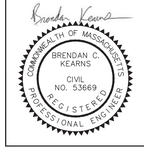
10 TIE–IN AT STA. 167+50
(END PROJECTED 2022 CONSTRUCTION PHASE)
SCALE: 1"=10'



11 TIE–IN AT STA. 167+50
(BEGIN PROJECTED 2023 CONSTRUCTION PHASE)
SCALE: 1"=10'



12 TIE–IN AT STA. 196+40
(END PROJECTED 2023 CONSTRUCTION PHASE)
SCALE: 1"=10'



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PROJECT
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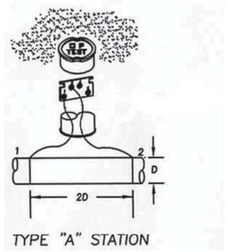
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale:	Job No.	Drawing No.	Rev. No.
N.T.S.	D–190–36	D08	A

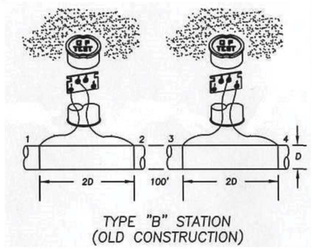
Title
TYPICAL DETAILS TIE–IN

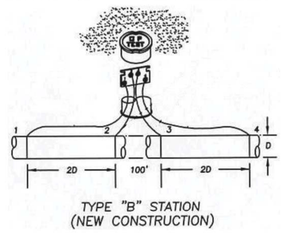
H. Type “A” Station



1 TEST STATION
(TYPE "A" STATION)
NOT TO SCALE

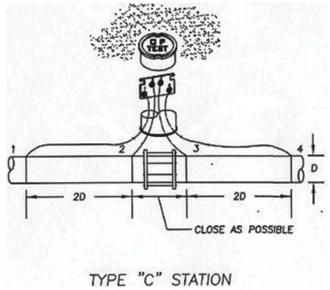
I. Type “B” Station





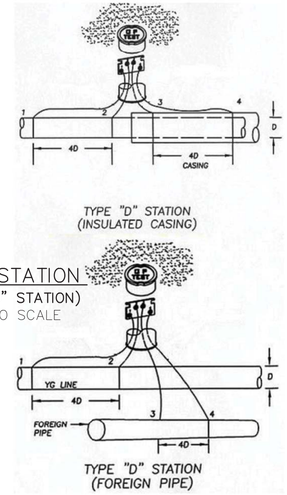
2 TEST STATION
(TYPE "B" STATION)
NOT TO SCALE

J. Type “C” Station
Wires 1 & 2 should be the same color and wires 3 and 4 should be the same color but a different color than 1 & 2.



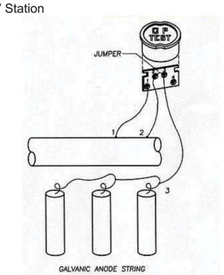
3 TEST STATION
(TYPE "C" STATION)
NOT TO SCALE

K. Type “D” Station
Wires 1 & 2 should be the same color and wires 3 and 4 should be the same color but a different color than 1 & 2.

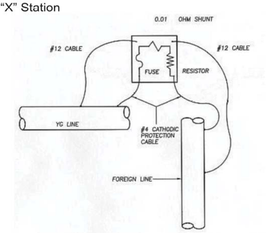


4 TEST STATION
(TYPE "D" STATION)
NOT TO SCALE

L. Type “M” Station



M. Type “X” Station



5 TEST STATIONS
(TYPE "A" STATION & TYPE "X" STATION)
NOT TO SCALE

Big Fink® Cathodic Protection Test Station

The Big Fink® cathodic protection test station is a field proven, high strength, maintenance free terminal for monitoring electric currents and potentials. Since 1976 the Big fink® CP test station has been utilized worldwide by gas, oil, chemical and water pipeline companies. Manufactured by Cott in Pittsburgh, Pennsylvania and Los Angeles, California; it is available from Cott distributors everywhere.

CP Test Station
Cap, Terminal Board and Collect Nut made from Makrolon® polycarbonate. One of the toughest plastics in the world.

Hardware
Standard nickel plated brass or optional stainless steel for guaranteed long service life. Up to 11 terminals accessible from both sides of the board.

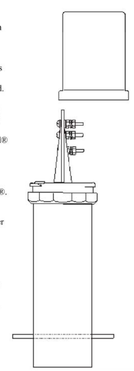
Accessories
All BigFink® terminal boards can accommodate COTTShunts®, Slide Resistors, COTTMeters® (Volt or Amp) Burndy connectors, Cott bonding/shorting straps, Banana Jacks, ZAPGard® , locking devices, lightning arrestors and flange mounting brackets.

Colors
Red, Orange, Yellow, Green, Blue, White and Black are standard on BigFink® and COTTPipe®. Any color is available as an option.

Support Post
COTTPipe® PE (standard) polyethylene has over 20 years of proven durability. COTTPipe® PC (optional) polycarbonate is available for the toughest applications. Standard length 6 feet, available to 40 feet.

Sizes
Available in models to fit 1-1/4", 2" and 3" pipe

Anchor
COTTPipe® PE is easily installed and prevents pullout.



6 TEST STATION
(BIG FINK)
NOT TO SCALE

ISSUED
PERMIT

Brendan Kearns
COMMONWEALTH OF MASSACHUSETTS
BRENDAN C. KEARNS
CIVIL
NO. 53669
REGISTERED
PROFESSIONAL ENGINEER

No.	Description	By	Date	Appd
	REVISIONS			
A	ISSUED FOR PERMIT	FAC	3/18/19	BCK

TRI-MONT Engineering Company
Plymouth, MA.

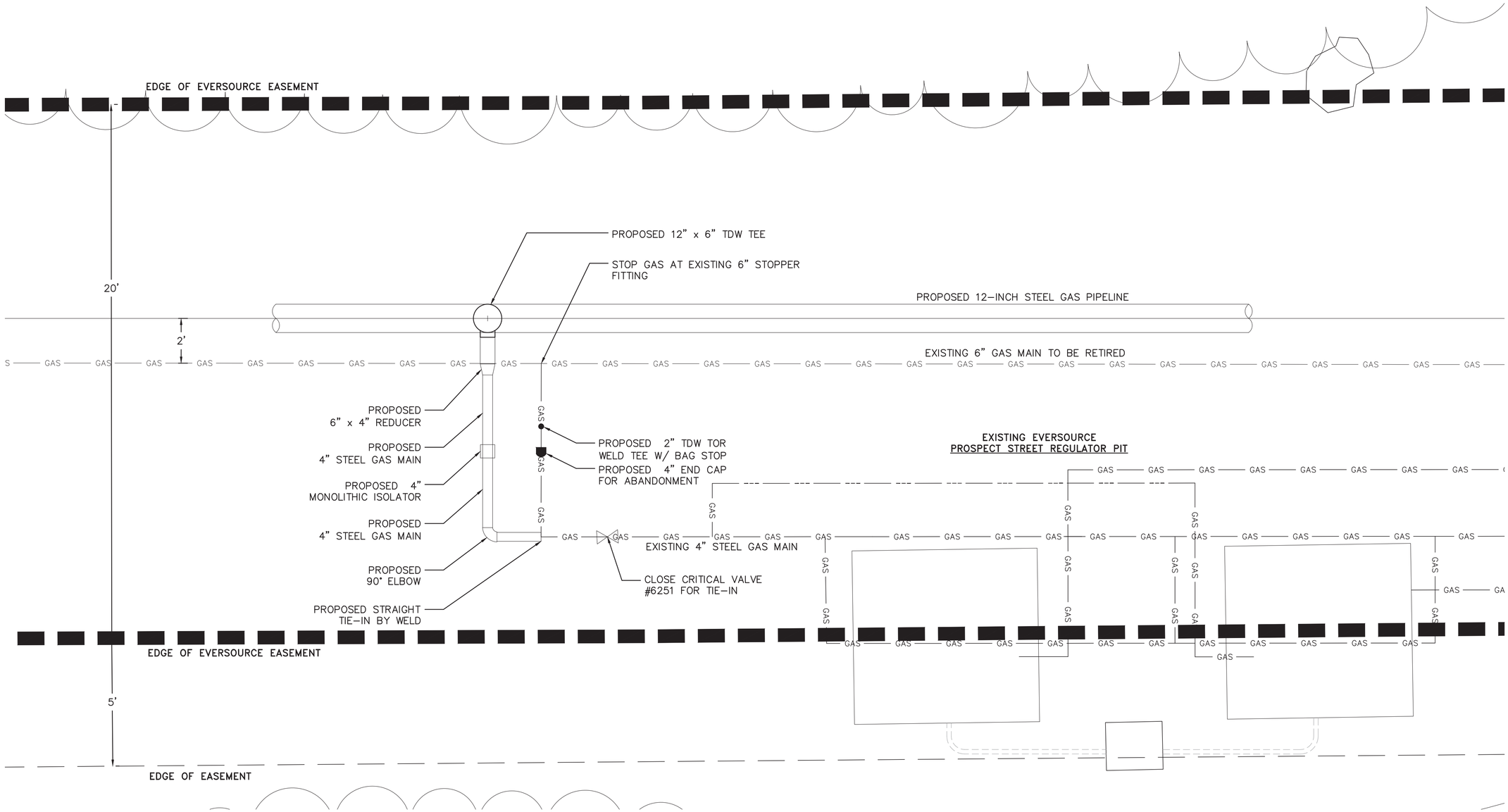
TRI-MONT	By	Date	Client	By	Date
Drawn	FAC	08/08/18	Approved		
Checked	BCK	08/08/18	Approved		
Approved	KHS	08/08/18	Approved		

Scale: N.T.S. | Job No. D-190-36-D09 | Drawing No. | Rev. No. A

PROJECT
HOPKINTON-ASHLAND TRANSFER LINE REPLACEMENT PROJECT

CLIENT
EVERSOURCE ENERGY

Title
TYPICAL DETAILS
TEST STATIONS



1 REGULATOR STATION INLET–TIE–IN DETAIL
NOT TO SCALE

ISSUED PERMIT

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Plymouth, MA.

PROJECT
HOPKINTON–ASHLAND TRANSFER LINE REPLACEMENT PROJECT

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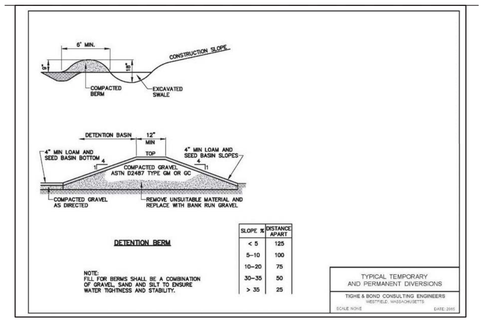
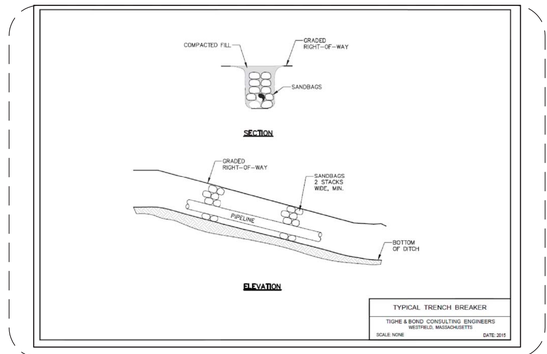
Scale: N.T.S. | Job No. D–190–36–D10 | Drawing No. | Rev. No. A

CLIENT
EVERSOURCE ENERGY

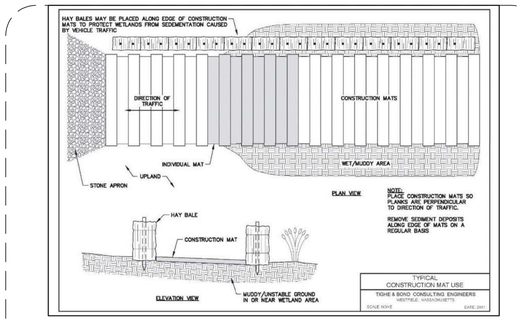
Title
TYPICAL DETAILS
REGULATOR STATION INLET TIE–IN



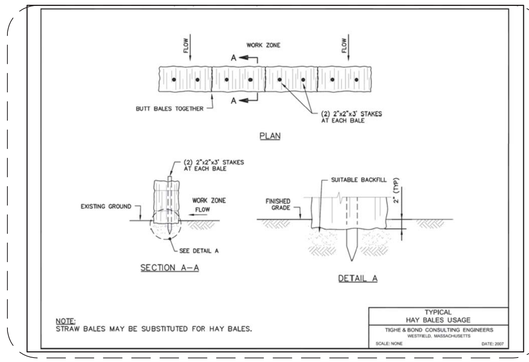
1 TYPICAL TEMPORARY AND PERMANENT DIVERSIONS
NOT TO SCALE



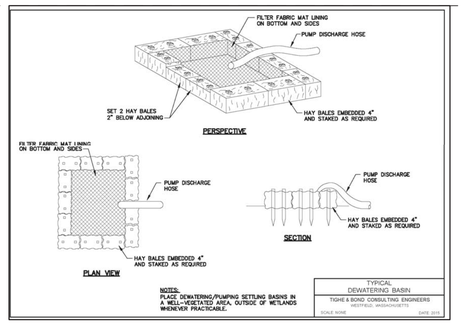
2 TYPICAL TRENCH BREAKER
NOT TO SCALE



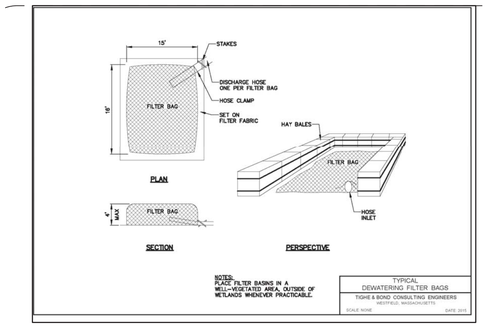
3 TYPICAL CONSTRUCTION MAT USE
NOT TO SCALE



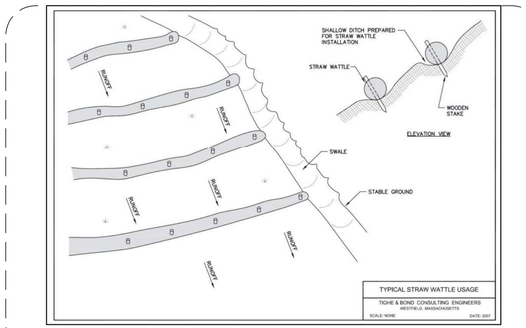
4 TYPICAL HAY BALES USAGE
NOT TO SCALE



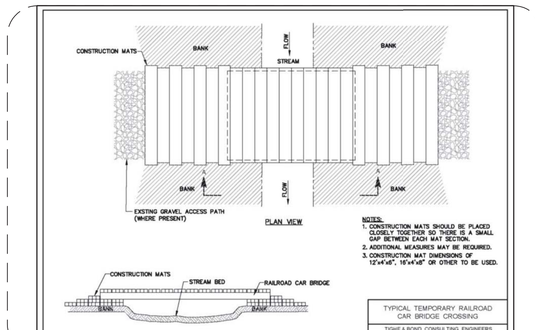
5 TYPICAL DEWATERING BASIN
NOT TO SCALE



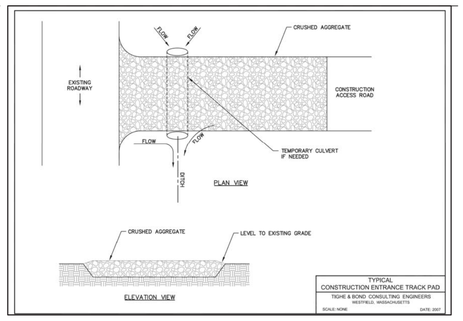
6 TYPICAL DEWATERING FILTER BAGS
NOT TO SCALE



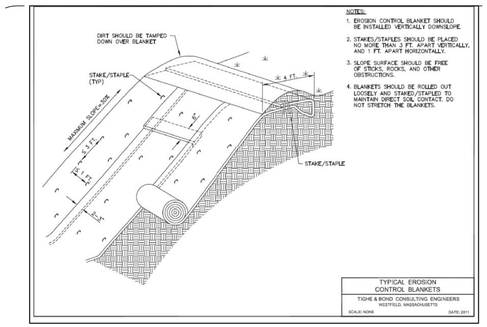
7 TYPICAL STRAW WATTLE USAGE
NOT TO SCALE



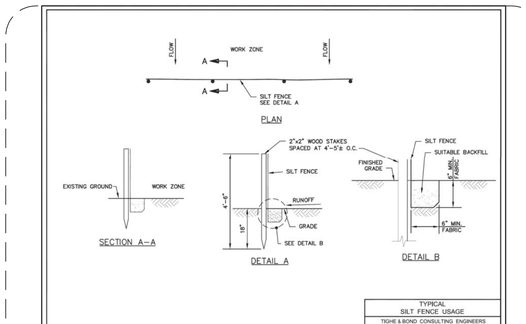
8 TYPICAL TEMPORARY RAILROAD CAR BRIDGE CROSSING
NOT TO SCALE



9 TYPICAL CONSTRUCTION ENTRANCE TRACK PAD
NOT TO SCALE



10 TYPICAL EROSION CONTROL BLANKETS
NOT TO SCALE



11 TYPICAL SILT FENCE USAGE
NOT TO SCALE

ISSUED PERMIT

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Approved	KHS	08/08/18	Approved		

Scale: N.T.S. | Job No. D-190-36 | Drawing No. D11 | Rev. No. A

Title
MISCELLANEOUS DETAILS